SECTION 319 NONPOINT SOURCE POLLUTION CONTROL PROGRAM

INVESTIGATIONS AND ABATEMENT OF PRODUCED WATER IMPACTS AND SEEPS TO SURFACE WATER

Downstream of Spence Reservoir (Segment 1426)
Coke and Runnels Counties, Texas

FINAL REPORT
September 2008



PREPARED BY THE:

RAILROAD COMMISSION OF TEXAS

IN COOPERATION WITH:

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CONTRACT NO. 582-5-70826

INVESTIGATIONS AND ABATEMENT OF PRODUCED WATER IMPACTS AND SEEPS TO SURFACE WATER

SECTION 319 NONPOINT SOURCE GRANT
UPPER COLORADO RIVER BASIN

Downstream of Spence Reservoir (Segment 1426)
Coke and Runnels Counties, Texas

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1.0 Introduction

The Environmental Protection Agency (EPA) and the Texas Commission on Environmental Quality (TCEQ) awarded a nonpoint source grant to the Railroad Commission of Texas (RRC) for the investigation of the nature and extent of known salinity contamination thought to be contributing to water quality problems in the Upper Colorado River between E. V. Spence Reservoir in Coke County and O. H. Ivie Reservoir in Runnels County, Texas, the development of remediation/abatement alternatives or Best Management Practices (BMPs), and the implementation of the BMPs. The TCEQ has placed Segment 1426 of the Upper Colorado River, downstream of E.V. Spence Reservoir, on the State's 303(d) list because it does not meet water quality standards. The project encompasses areas in both Coke and Runnels Counties referred to as the Wendkirk Oil Field and Ballinger Seep, respectively (Figure 1). Surface water and groundwater in the Wendkirk Oil Field also flow into Segment 1426 as the Colorado River runs through the field in Coke County. Discharge from the Colorado River Seep near Ballinger flows directly into Segment 1426 of the Colorado River. The Hydrologic Unit Codes for this study are 12080008 and 12090101.

Salinity in the Upper Colorado River Basin has been identified as a major water quality problem. Occurrences of poor-quality water in Segment 1426, due to elevated salinity levels, have been documented. Possible sources include activity associated with oil and gas operations, such as improperly completed oil and gas wells, abandoned, unplugged oil and gas wells, wells that are improperly or inadequately plugged with respect to current plugging regulations, saltwater injection and/or disposal wells that have mechanically failed or pressurized the oil reservoir so that salt water can migrate up via natural and anthropogenic conduits, failed gathering and transporting pipelines, historical evaporation pit locations, and abandoned surface facilities. Natural salinity of the Permian red beds that are cut by drainage patterns, soils, surface water runoff, and groundwater from saltwater-bearing formations also contribute salts to Segment 1426 of the Colorado River; however, the composition of these salts usually trend more toward gypsum salts (calcium sulfate) than the salts indicative of oil field produced waters (sodium chloride). Results from samples collected from the Upper Colorado River by the Colorado River Municipal Water District (CRMWD) and the United States Geological Survey (USGS) indicated that the salinity in the Colorado River increases as it flows through the Wendkirk Oil Field in Coke County. The Ballinger Seep in Runnels County contains salt-impacted water that seeps into a drainage alluvium a few feet before it feeds into the Colorado River. One of the investigation goals was to determine the extent of contamination by oil and gas (O&G) exploration and production practices.

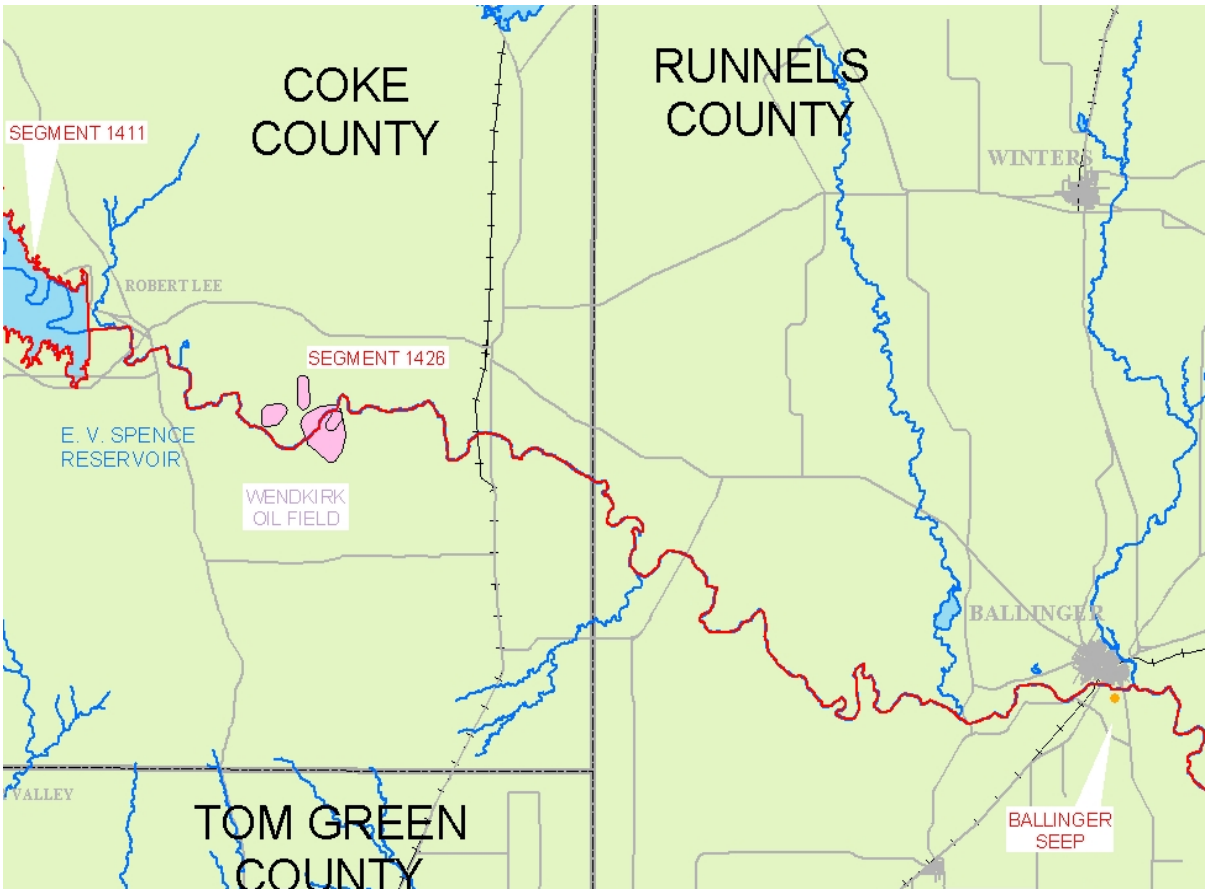
The objectives of the project were to identify and investigate the source(s), nature, and extent of elevated salinity in the Upper Basin Watershed of the Colorado River to determine and evaluate the most effective BMPs, specifically in the areas of the Colorado River Seep at Ballinger and in the Wendkirk Oil Field projects. The investigations required an inventory of the current and former land uses within the study areas, ongoing sampling of water wells, known seeps, and the Colorado River, the installation and sampling of soil borings, and the installation and ongoing sampling of groundwater monitoring wells. Initially samples were analyzed for chlorides, total dissolved solids (TDS), and sulfate. Because benzene, toluene, ethylbenzene, xylenes, and total

petroleum hydrocarbons can also be found in produced water, these chemicals were periodic analyzed throughout the investigation.

The RRC conducted various activities to achieve the goal of reduced nonpoint source pollutant loading to the Upper Colorado River. The RRC completed source investigations and determined effective remediation projects through the following means:

1) Conducted non-invasive geophysical surveys on selected areas suspected of high salinity in soil and groundwater. (These surveys were determined based on the results of an aerial geophysical survey conducted by the Bureau of Economic Geology [BEG]; and, in the case of the Wendkirk Oil Field, by analytical data collected from a number of installed monitor wells and water wells.)
2) Performed soil borings in historic pits near suspected O&G facilities and in known and suspected release areas.
3) Installed monitoring wells in suspected plume areas, up gradient of known saltwater seeps, down gradient of suspected O&G facilities, and in alluvial deposits along the drainage downstream of discharge areas.
4) Sampled monitor wells installed during the investigations and water wells in the areas of both projects.
5) Conducted studies to choose and implement BMPs for both projects in order to reduce the high TDS loading.

Figure 1 Segment 1426 of the Colorado River in Coke and Runnels Counties, Texas



A mutual objective of the RRC and the TCEQ is to locate sources and to reduce the high salinity that contributes to water quality degradation. The Wendkirk Oil Field and Ballinger Seep investigations were undertaken to enhance the pollution prevention efforts of the RRC and the TCEQ as well as to reduce the salt load into and help to restore and maintain the water quality of the Upper Colorado River Basin, downstream of Spence Reservoir.

2.0 Ballinger Seep

2.1 Source Investigation Phase of the Project

The Ballinger Seep site is located along the Colorado River approximately half a mile east and downstream of Ballinger, Runnels County, Texas. The RRC contracted with Terracon Consultants, Inc. (Terracon), to investigate the Ballinger Seep. A description of the investigation of the Ballinger Seep by Terracon is included in Attachment A: *Summary Report Ballinger Seep, Ballinger, Runnels County, Texas.* Laboratory reports for this project may be found on the RRC website.
(http://www.rrc.state.tx.us/divisions/og/site_rem/nps/)

Terracon reviewed RRC records, aerial photographs, and completed the Ballinger Seep site visit to confirm locations and information. During the site visit, conductivity readings of the seep and tributary were taken to evaluate potential sources. Data gathered from the site visit and from the review of RRC well records and aerial photographs assisted in the determination of soil boring and monitor well locations.

The main source of saline water seepage was determined to be from an uncased cable tool well drilled in 1935 identified as the Wolverton Well No. 1. The well was designated as a dry hole and subsequently filled with junk and debris on top of a wooden plug and abandoned. In the 1990s the RRC discovered that the Wolverton Well No. 1 was flowing water to the ground surface, suggesting that the well was a probably source of the saltwater seeps along the drainage to the Colorado River. On August 11, 1998, the RRC re-entered the well to eliminate the water source. However, during plugging activities theRRC experienced difficulty in penetrating the debris without diverging from the original well bore and the new well bore was plugged and set with casing to 164 feet prior to investigating the well at deeper depths (Figure 2). Although at the time RRC perceived the well to be adequately plugged, the saltwater seeps to the Colorado River continued and suggested that the Wolverton Well No. 1 remained a probable source contamination. Recently, Terracon distinguished a shallow water-bearing zone and a deeper zone that contribute to the Colorado River. Both zones contain groundwater impacted with elevated chloride concentrations, with the shallow zone containing the highest salinity. In order to mitigate the probable source of contamination, Terracon recommended the re-entering and plugging of the Wolverton Well No. 1.

2.2 BMP Selection, Implementation, and Effectiveness

The RRC and Terracon determined that the BMP to mitigate the Ballinger Seep would be the re-entering and plugging of Wolverton Well No. 1.

Re-entry and Plugging of the Wolverton Well No. 1
The Wolverton Well No. 1 was re-entered a second time by the RRC and plugged on June 27, 2008. During the plugging procedures, an 11-inch hole was drilled besides the 4½ -inch casing, which the RRC set at a depth of 164 feet during the 1998 plugging. The 11-inch hole was drilled to a depth of 270 feet, but flow back was not observed in the

Figure 2 Well Schematic of the 1998 Plugging of the Wolverton Well No. 1

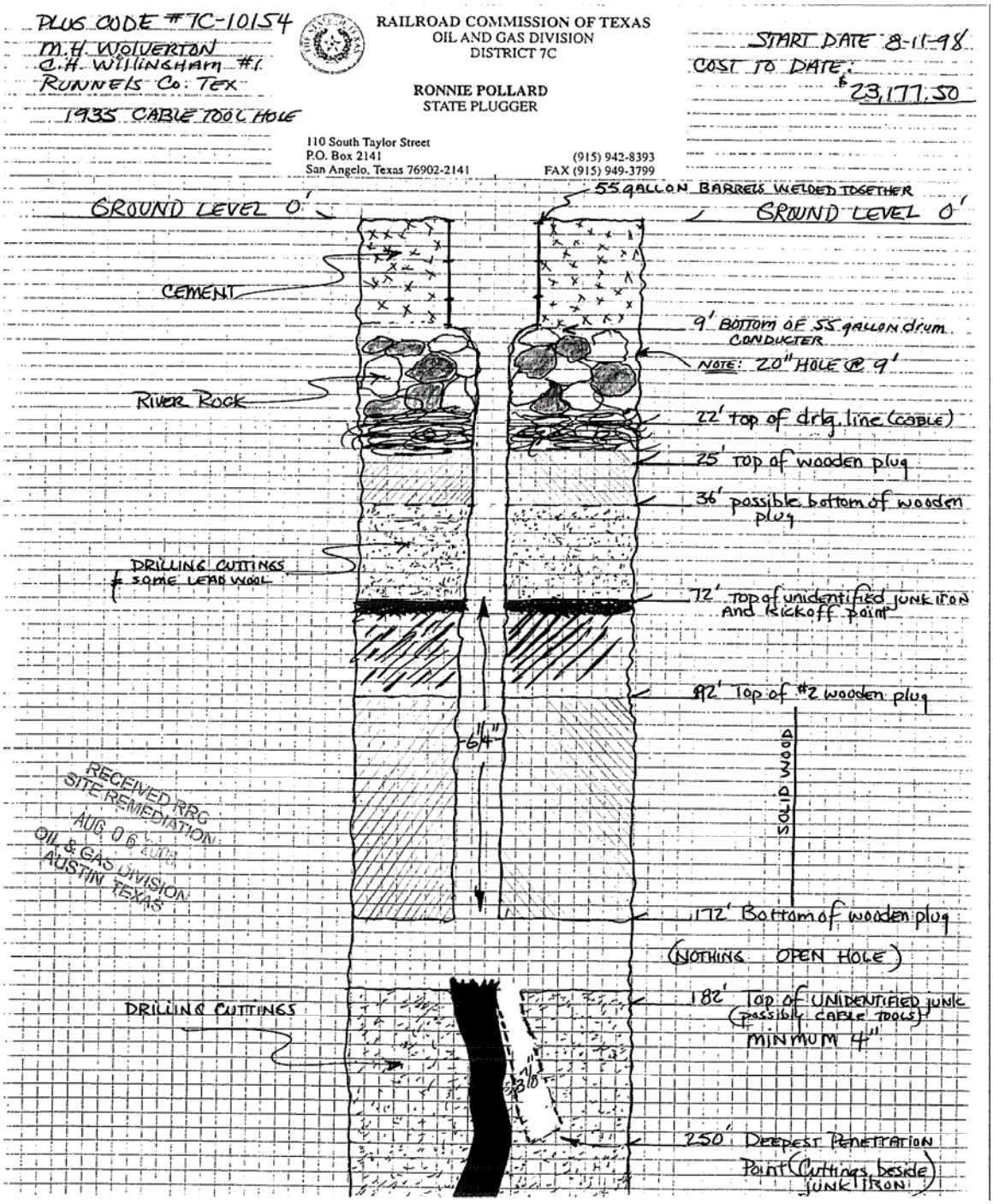
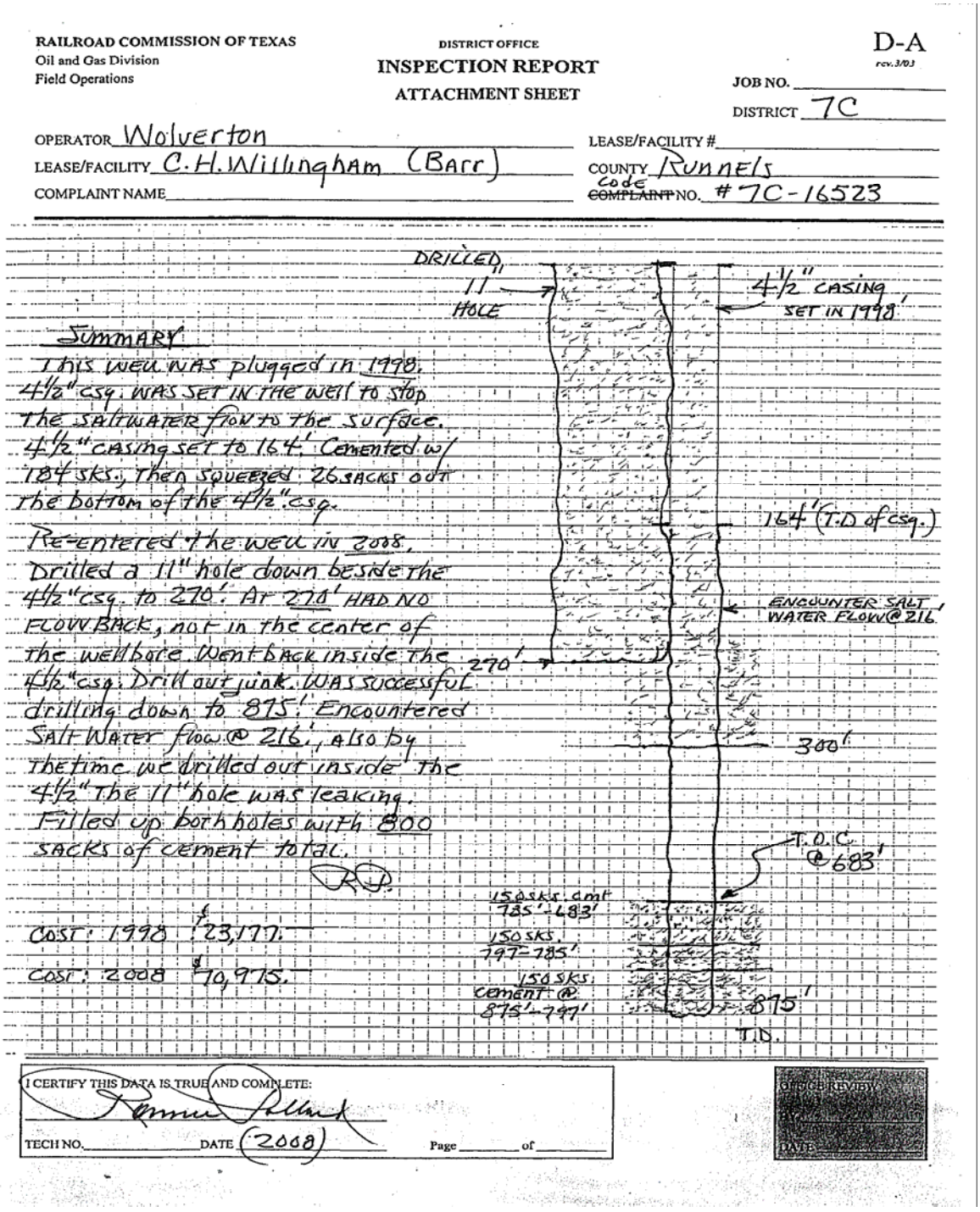


Figure 3 Well Schematic of the 2008 Plugging of the Wolverton Well No. 1



RAILROAD COMMISSION OF TEXAS
Oil and Gas Division
Field Operations

DISTRICT OFFICE
INSPECTION REPORT
ATTACHMENT SHEET

D-A
rev. 3/03

JOB NO. _____
DISTRICT 7C

OPERATOR Wolverton
LEASE/FACILITY C.H. Willingham (Barr)
COMPLAINT NAME _____

LEASE/FACILITY # _____
COUNTY Runnels
code
~~COMPLAINT~~ NO. #7C-16523

Summary
This well was plugged in 1998. 4½" csg. was set in the well to stop the saltwater flow to the surface. 4½" casing set to 164'. Cemented w/ 184 sks., then squeezed 26 sacks out the bottom of the 4½" csg.
Re-entered the well in 2008. Drilled a 11" hole down beside the 4½" csg. to 270'. At 270' had no flow back, not in the center of the wellbore. Went back inside the 4½" csg. Drill out junk. Was successful drilling down to 875'. Encountered salt water flow @ 216', also by the time we drilled out inside the 4½" the 11" hole was leaking. Filled up both holes with 800 sacks of cement total.
RP

Cost: 1998 $23,177.
Cost: 2008 $70,975.

DRILLED 11" HOLE
4½" CASING SET IN 1998'
164' (T.D of csg.)
ENCOUNTER SALT WATER FLOW @ 216'
270'
300'
T.O.C @ 683'
150 sks. cmt 785'-683'
150 sks. 797-785'
150 sks cement @ 875'-797'
875'
T.D.

I CERTIFY THIS DATA IS TRUE AND COMPLETE:
Ronnie Killough
TECH NO. _____ DATE (2008) Page _____ of _____

OFFICE REVIEW
DATE

hole at that time. In order to maintain the drilling in the center of the original well bore, the RRC re-entered the 4½-inch casing and successfully drilled through the junk and debris to a depth of 875 feet. Saltwater flow was encountered at a depth of 216 feet, and by the time the original well bore was drilled to the 875-foot depth, the 11-inch hole was found to be leaking. The RRC filled both holes with 800 sacks of cement total (Figure 3). The observation of saltwater flow during plugging supported the hypothesis that the Wolverton Well No. 1 has been the primary source of salinity in groundwater in the immediate area of the plugged well, which has been feeding the seepage of salinity into the Colorado River. The RRC will continue to sample the monitor wells, the seeps, and the Colorado River to determine the effectiveness of the BMP. The cost for re-entering and plugging the Wolverton Well No. 1 totaled $70,975.

2.0 Wendkirk Oil Field

2.1 Source Investigation Phase of the Project

The Colorado River flows through the Wendkirk Oil Field approximately two miles east and downstream of the confluence of Machae Creek and the Colorado River in eastern Coke County, Texas. The RRC contracted with TRC Companies, Inc. (TRC), to conduct an investigation in the Wendkirk Oil Field to determine possible sources of elevated salinity in groundwater, which impact the Colorado River as it flows through the oil field. A description of the investigation of the Wendkirk Oil Field by TRC is included in Attachment B: *Final Comprehensive Report Wendkirk Oil Field, Upper Colorado River Segment 1426, Coke County, Texas.* Laboratory reports for this project may be found on the RRC website. (http://www.rrc.state.tx.us/divisions/og/site_rem/nps/)

In early September 2005, the BEG submitted a report of an airborne electromagnetic (EM) survey of Segment 1426, or the Colorado River, which included Machae Creek and Wendkirk Oil Field areas. Along with information from RRC files, water well files, geological maps and cross-sections, and preliminary field reconnaissance, the BEG report was used to develop a strategy for investigation of the field. The goal of the investigation was to collect data to develop a scope of work for the investigation in an effective and efficient manner considering the wide expanse of the Wendkirk Oil Field. Based on a strategy for optimum effectiveness, the investigation intended to identify potential sources most likely to be contributing salinity to the Colorado River. With the preliminary data and throughout the investigation, TRC developed topographic and aerial photographic maps, which included monitor well and water well locations, oil and gas well locations and descriptive data, and physical structures such as residences, roads, and tank batteries.

Results of the Wendkirk Oil Field source investigation revealed highest chloride concentrations in groundwater south of the Colorado River in the area encompassing monitor well MW-18 and including monitor wells MW-12, MW-05, MW-10 and MW-11 and the Mays-01 and Mays-02 water wells. Chloride concentrations ranged from 20,000 mg/L to 35,000 mg/L in high sodium/chloride water. These concentrations suggested that either the impact was directly related to oil field brine or the saltwater was coming from the Coleman Junction Formation, found at a depth of approximately 2,500 feet, which

had been penetrated by the drilling of oil wells in the area. In particular, elevated concentrations of chloride, calcium and sulfate were observed at the Mays–01 water well; and this well was identified as a possible source of contamination. Because of the water well's large size of observable steel casing, which is unusual for a water well and indicative of an oil well, and the lack of water well driller's records to determine the well's historic use, the RRC hypothesized that the water well was converted from a former oil well that intersected the Coleman Junction formation, an artesian brine-bearing unit.

3.2. BMP Selection, Implementation, and Effectiveness

In preparation of a BMP feasibility study, step tests were completed in six of the monitor wells during the June 2007 mobilization. Visual logging equipment was used during the mobilization to complete the down-hole logging of the Mays-01 water well, south of the Colorado River, and to collect two discrete groundwater samples from the well. Based on the logging, sampling, and a records search, it was determined that the Mays-01 well most probably was a converted oil well, which had been plugged back to groundwater depths. The high salinity in the well may have been due to bottom-hole pressure within the oil reservoir, which caused saline water to rise to the surface or near surface. Alternatively, it may have been due to impact from the Coleman Junction, a pressurized saline-bearing formation, which the Mays-01 well bore was thought to intersect. The step tests indicated that slug tests would be the best measure of aquifer parameters that would provide data for the BMP feasibility study. Two monitor wells and an observation well were installed in the vicinity of the Mays-01 water well. A slug test was performed on the new observation well. A lithologic boring was installed north of the Colorado River to confirm the presence of a claystone that might act as a confining layer to prevent the high saline water found in two of the monitor wells north of the River from flowing into the Colorado from that direction.

BMPs discussed in the BMP feasibility report included: strategically located recovery wells, trenches, and plugging of wells. Waste disposal of recovered saline water included: the drilling and completion of a disposal well, an evaporation pond and disposal in an existing commercial or non-commercial disposal well, and installation of a battery of holding tanks.

In order to abate the load in the most effective manner, the area within the Wendkirk Oil Field that, by investigation, demonstrated the highest levels of oil field brine (20,000 mg/L to 35,000 mg/L chlorides) was chosen as the area of focus. The RRC chose two BMPs to diminish the salt load flowing directly into the Colorado River during the gaining periods of the river:

- A recovery well system and storage tank battery.
- The plugging of Mays-01 water well.

Recovery Well System:
TRC submitted the 100 percent Engineering Design for a recovery well system located in a down-gradient pattern between the Mays-01 water well and the Colorado River and a tank battery for storage of the recovered water. The design was created under the assumption that the Mays-01 water well was the source, or one of the sources, of the high

groundwater salinity. Implementation of the recovery well system depended on 1) the successful negotiations with the landowner concerning access routing and 2) the confirmation that the Mays-01 water well was a source of the high groundwater salinity. Due to the dependency of BMP implementation on time-consuming procedures and to the lack of sufficient funds remaining in the grant, the recovery well system BMP could not be implemented during the project period.

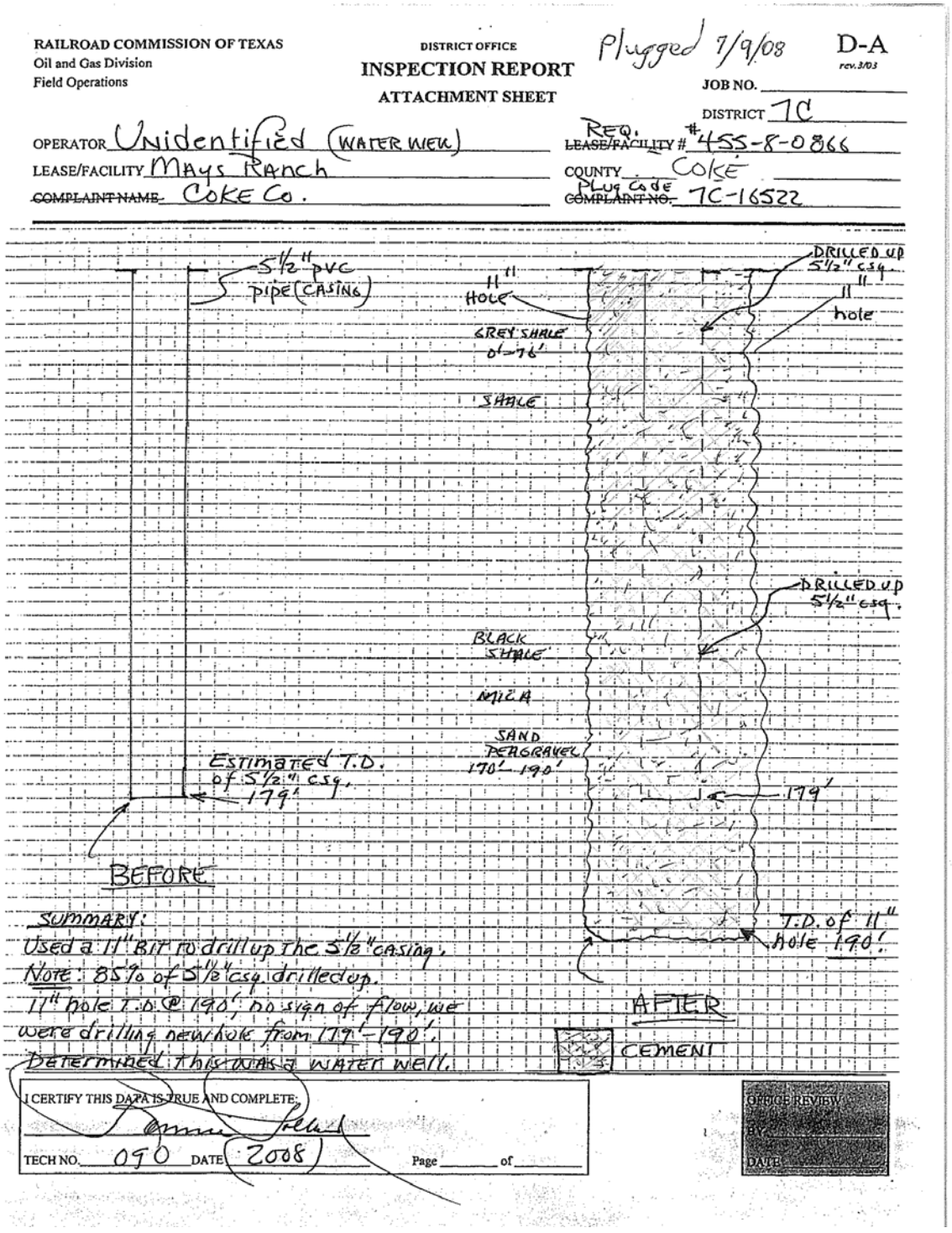
The Plugging of the Mays-01 Water Well:
The Mays-01 water well was suspected to be a converted oil well that had been plugged back for use as a water well. During the plugging of the well by the RRC on July 9, 2008, it was discovered that the total depth of the original well bore was 179 feet. The water well was re-entered through the 5 ½-inch PVC pipe (casing) in the water well to make certain that the original well bore would not be missed. New hole was drilled from 179 feet to 190 feet to demonstrate that the Mays-01 water well was installed as a water well and was not a converted oil well. An 11-inch bit was used to drill out the Mays-01 water well to a depth of 190 feet. The well bore was then filled with cement from total depth to the surface (Figures 4 and 5). There was no sign of saltwater flow during the plugging of the Mays-01 water well, and it was established that the total depth of the well was not sufficient to provide a conduit from the pressurized Coleman Junction Formation, which contains predominantly high sodium/chloride water and is found at a depth of approximately 2,500 feet. Collectively, these results suggested that the Mays-01 water well did not appear to be a source of the saline water. Monitoring for a period of time will verify whether the Mays-01 water well was providing an avenue for the contamination to travel into the groundwater or was itself reflecting groundwater impact from another source. The total cost of the BMP implementation at the Mays-01 water well was $30,290.

A future BMP consisting of a recovery well system will most likely necessitate a modification of the existing 100 percent Engineering Design.

Figure 4 Plugging of the Mays-01 Water Well



Figure 5 Well Schematic of the 2008 Plugging of the Mays-01 Water Well



4.0 Budget Summary

Table 1 Budget Summary

Grant Period	2/14/2005 to 8/31/2008
EPA Grant Award	$737,638
EPA (60 %)	$442,583
RRC (40%)	$295,055
EPA Funds Spent	$442,583
RRC Funds Spent	$347,997
RRC Funds Spent Above 40% Match	$52,942
BMP Costs	$140,457
TOTAL GRANT COSTS	**$790,580**
Budget Revisions	In August 2008, TCEQ transferred $144,000 from the NPS Downstream of Spence Reservoir, Segment 1426, grant (contract number 582-570826) to the Upstream of Spence Reservoir, Segment 1411, grant (contract number 582-5-70825). The original EPA grant award of $881,638 for the NPS Downstream of Spence Reservoir, Segment 1426, decreased to $737,638 and the original EPA grant award for the NPS Upstream of Spence Reservoir, Segment 1411, increased from $805,803 to $949,803.

5.0 Ongoing Activities

5.1 Ballinger Seep BMP

The RRC will continue to sample the monitor wells, the seeps, and the Colorado River to determine the effectiveness of the BMP in reducing the salt load into the Colorado River.

5.2 Wendkirk Oil Field BMPs

A BMP that includes recovery wells and a tank battery system for the reduction of the salt load into the Colorado River will be the focus of a future project. In the meantime, the RRC will continue to sample the monitor wells, springs, seeps, and the Colorado River within the Wendkirk Oil Field. The RRC will continue to determine sources and steps for source eradication.

Before and during BMP installation and monitoring, additional potential sources of salinity may be identified. These sources could include plugged and unplugged oil wells that pose a threat to surface and subsurface waters by providing a pathway for the migration of fluids (oil and saltwater) from pressurized oil reservoirs or pressurized salt water-bearing non-productive formations into formations containing usable quality water and into surface waters. In these cases, a record review of oil and gas wells and water wells within the area of highest chloride contamination will be conducted to determine whether the wells were inadequately plugged and to determine completion information. Suspected wells will then be further evaluated to determine if they are contributing contamination by the installation of monitor wells. Wells identified as possible sources will be plugged and abandoned to prevent any potential influence from deeper formations. Based on an estimated recovery by six recovery wells of 150 barrels of water per day with an average chloride contamination level 30,000 mg/L, the load reduction from the Wendkirk Oil Field into the Colorado River would amount to 1,574 pounds per day and 574,877 pounds per year.

Attachment A

Summary Report Ballinger Seep, Ballinger, Runnels County, Texas

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Consulting Engineers and Scientists
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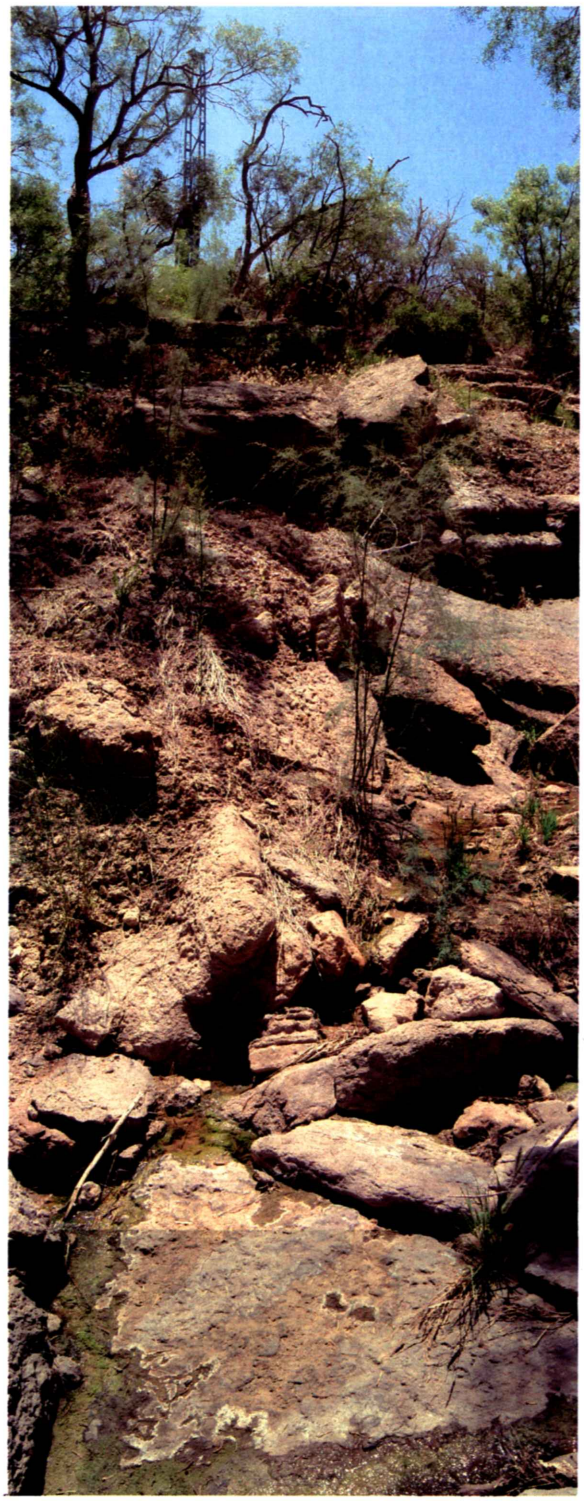
SUMMARY REPORT
Ballinger Seep
Ballinger, Runnels County, Texas

SECTION 319 NONPOINT SOURCE GRANT
UPPER COLORADO RIVER BASIN
Downstream of Spence Reservoir
(Segment 1426)
Coke and Runnels Counties, Texas

Prepared for:
Railroad Commission of Texas
1701 North Congress Avenue
Austin, Texas 78711

Prepared by:
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8901 Carpenter Freeway, Suite 100
Dallas, Texas 75247

Terracon Project No. 94057272C
September 12, 2008



Max Majesko
Senior Scientist

Steven R. Neely, P.E.
Project Manager

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September 12, 2008

Railroad Commission of Texas
1701 North Congress Avenue
Austin, Texas 78711

Attn: Mr. Bill Renfro

Telephone: (512) 463-6812
Fax: (512) 463-2388

Re: Summary Report
Ballinger Seep
Ballinger, Runnels County, Texas
Terracon Project No. 94057272C

Dear Mr. Renfro:

Terracon Consultants, Inc. (Terracon) is pleased to submit this Summary Report for the above referenced site that includes the July and August 2008 groundwater and surface water sampling events since the recent re-entering and plugging of the Wolverton Well No. 1. The additional groundwater sampling and report update were performed in accordance with Terracon's Work Order for the site dated June 25, 2008.

We appreciate the opportunity to perform these services for the Railroad Commission of Texas. Please contact any of the undersigned at (214) 630-1010 if you have questions regarding the information provided in the report.

Sincerely,
Terracon

Prepared by:

Max Majesko
Senior Scientist

Reviewed by:

Steven R. Neely, P.E.
Project Manager

Reviewed by:

Michael E. Covert, P.G.
Quality Assurance Officer

STATE OF TEXAS
MICHAEL COVERT
GEOLOGY
LIC.# 1636
LICENSED
PROFESSIONAL GEOSCIENTIST

Enclosure: as stated

Terracon

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Terracon

SUMMARY REPORT
BALLINGER SEEP
BALLINGER, RUNNELS COUNTY, TEXAS
Terracon Project No. 94057272C
September 12, 2008

1.0 INTRODUCTION

1.1 Section 319 Nonpoint Source Grant Background

Salinity in the Upper Colorado River Basin has been identified as a major water quality problem by the Colorado Municipal Water District (CMWD), United States Geological Survey (USGS), and Texas Commission on Environmental Quality (TCEQ). Occurrences of poor quality water in Segment 1426 (Colorado River below E.V. Spence Reservoir) due to elevated salinity levels have been documented from numerous sources. Some possible sources include activity associated with oil and gas operations such as improperly completed oil and gas wells, abandoned, unplugged oil and gas wells, wells that are improperly or inadequately plugged, saltwater injection and/or disposal wells, failed gathering and transporting pipelines, historical evaporation pit locations, abandoned surface facilities and natural sources.

The TCEQ has placed Segment 1426 of the Upper Colorado River on the State's 303(d) list of impaired surface water bodies. Figure 1 presents a Topographic Map of the project area. A mutual objective of the Railroad Commission of Texas (RRC) and the TCEQ is to locate sources of salinity and reduce the high salinity that contributes to water quality degradation. The RRC has received a Grant from the U.S. Environmental Protection Agency (EPA) to perform investigations and abatement of produced water impacts and seeps to surface water in Runnels and Coke Counties, Texas (Colorado River Segment 1426 Downstream of Spence Reservoir).

1.2 Ballinger Seep Background

The RRC was first notified of the Ballinger seep via a complaint (Complaint No. 7C-2042) from the property owner, Mr. Jim Studer, on August 2, 1998. The Ballinger seep was observed to be flowing into a tributary of Segment 1426 of the Colorado River. The RRC conducted an investigation to identify the source of the seep and identified the H&R Oils, Inc., Johnnie H. Barr Lease, Well No. 3 (Terracon ID No. 2 on Figure 1). This well was subsequently plugged by the RRC on August 11, 1998. Based on observations during the plugging operations, it was concluded that this well was not contributing to the saltwater flow into the tributary.

During plugging activities associated with the H&R Oils Well No. 3, RRC personnel discovered the M. H. Wolverton, C. H. Willingham Lease, Well No. 1 (Wolverton Well No. 1) (Terracon ID No. 1 on Figure 1). Based upon the presence of salt crystals on the ground surface covering an approximate

15 ft x 150 ft area from the Wolverton Well No. 1 toward the tributary; the fact that the well was determined to have been an uncased cable tool dry hole which was drilled in 1935; and the location of the Wolverton Well No. 1 approximately 350 feet from the seep, the Wolverton Well No. 1 was identified as a possible source of the seep. RRC staff plugged the Wolverton Well No. 1 in 1998. RRC staff observed during plugging activities saltwater at a depth of approximately 28 feet below the ground surface (bgs) in this well.

The Ballinger seep was identified by the RRC as a potential source of high salinity in the Colorado River since discharge from the Ballinger seep flows into a tributary of Segment 1426 of the Colorado River. Prior to plugging activities, RRC records indicated the chloride concentration in water from the seep was 58,000 milligrams per liter (mg/L). Subsequent observations of the seep by RRC personnel indicated that the seep appeared to have decreased in magnitude since plugging of the Wolverton Well No. 1 in 1998.

Terracon Consultants, Inc. (Terracon) performed a site visit in May 2005 to evaluate the seep, evaluate potential sources of the seep and identify potential sample locations. Terracon observed two seep expressions into the tributary of the Colorado River. One seep expression was in the upper portion of the tributary (upper seep), approximately 350 feet west-northwest of the Wolverton Well No. 1. The second seep expression was observed in the lower portion of the tributary (lower seep), approximately 600 feet northwest of the Wolverton Well No. 1. Over time the flow rate of the seep expressions fluctuated based on the amount of precipitation. The lower seep was actively flowing in July-August 2006, April-May 2007, and July-August 2008. The upper seep expression was not flowing in July-August 2006 and July-August 2008.

1.3 Scope of Work

Terracon has conducted site investigation activities at the Ballinger seep from July 2006 through August 2008. The scope of work for these site investigation activities was based on Terracon's Work Orders for the site dated April 13, 2006, March 28, 2007, and June 25, 2008.

The objective of the work was to identify and investigate the potential source(s) of the Ballinger seep and its hydraulic connection to the associated tributary into which it flows. Items completed to meet the objective included:

- Reviewing geologic information for the area and RRC records (i.e. well completion, plugging workover data and pits).
- Drilling and sampling soil borings near the potential source area(s) and in up- and down-gradient locations relative to the seep.
- Installing groundwater monitor wells and collecting water samples up- and down-gradient of the seep and apparent source area(s).
- Sampling water from the seep for water quality and quantity.

- Sampling water from the tributary and Colorado River for water quality.
- Preparing a report of site investigation activities that includes recommendations for abatement of the seep, or further investigation, if warranted.

And, as reported herein;

- Conducting additional surface water and groundwater sampling following implementation of the selected BMP (i.e. re-entering and plugging of the Wolverton Well No. 1).

The scope of work was performed in general accordance with the RRC Quality Assurance Project Plan (QAPP) entitled *Investigations and Abatement of Produced Water Impacts and Seeps to Surface Water in the Upper Colorado River Basin Downstream of Spence Reservoir (Segment 1426)*, dated December 16, 2005 (July-August 2006 investigation activities), revised February 1, 2007 (April-May 2007 investigation activities), and revised March 7, 2008 (July-August 2008 investigation activities).

1.4 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. Terracon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that Terracon does not warrant the work of laboratories or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work as presented in the final work orders dated April 13, 2006, and March 28, 2007, and June 25, 2008.

1.5 Additional Scope Limitations

Findings, conclusions and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this site investigation. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

1.6 Reliance

This report has been prepared for the exclusive use of the RRC, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of the RRC and Terracon. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in our contract for professional services with the RRC and this site investigation report.

2.0 FIELD ACTIVITIES

2.1 Records Review

Prior to conducting field activities, Terracon reviewed available RRC records for oil and gas wells present within an approximate one-half mile radius of the site and historical aerial photographs and geologic maps of the area. Based on our review and conversations with RRC personnel, it appeared that the Wolverton Well No. 1 was the likely source of the elevated saline water.

As stated previously, the Wolverton Well No. 1 was plugged by the RRC in 1998. Metal debris was encountered at a depth of approximately 182 feet bgs in this well during plugging activities. Following repeated attempts to drill through the debris, the well bore was drilled out to a depth of 182 feet bgs utilizing a 7 7/8-inch drill bit. During re-entry of the well bore, a saltwater flow was encountered, which continued to increase to a rate of approximately three barrels per hour as the well bore was drilled out. A 4 1/2-inch casing was cemented in the well bore from 164 feet bgs to the surface. A tubing packer was set at a depth of 126 feet bgs and 53 sacks of cement were squeezed below the packer. The packer was released the following day and no water flow was observed. A cement plug was subsequently set from 127 feet to the surface.

Site Geology

Review of the *Soil Survey of Runnels County, Texas*, dated March 1970 (USDA, 1970), indicates site soils consist of the Talpa-Kavett complex and the Colorado and Yahola soils. The Talpa clay loam and Kavett silty clay are very shallow soils situated over hard limestone and yellow marl. In areas where limestone crops out, these soils are stony and gravelly; runoff is rapid; and permeability is moderate to moderately low. The available water capacity is low in the Talpa soil and moderate in the Kavett soil. The Colorado and Yahola soil unit consists of eighty percent Colorado loam and twenty percent Yahola fine sandy loam. These soils occur as long narrow strips adjacent to the major streams in Runnels County and are most common along the Colorado River. Permeability is moderate and the available water capacity is high. These soil descriptions are consistent with the soils observed at the site as detailed on the soil boring logs included in Appendix B.

Review of the *Geologic Atlas of Texas, Brownwood Sheet*, dated 1976 (BEG, 1976), indicates that the site is situated on alluvium and the Lueders Formation. Alluvium (observed along the Colorado River during drilling activities) consists of channel and floodplain deposits comprised of gravel, sand, silt, clay and organic matter. The Lueders Formation consists of limestone and shale. The southern portion of the Lueders Formation, which was observed at the site during drilling activities, consists predominantly of limestone with thin shale interbeds.

The presence of groundwater in Runnels County is intermittent. No major or minor aquifers are present within the county. Groundwater occurs intermittently throughout the county in water-bearing Permian limestones and dolomites, basal Cretaceous sandstones and alluvial deposits at depths of up to 300 feet bgs. These formations typically yield small quantities of poor quality water. Terracon obtained groundwater quality monitoring data for water wells located in Runnels County that produce from the Lueders Formation online from the Texas Water Development Board (http://www.twdb.state.tx.us). This data was utilized to determine background concentrations for various anions and cations that were evaluated as part of this site investigation. A summary of this data is presented in Table 8 in Appendix C.

Based on a review of *Preliminary Assessment of Soil and Groundwater Salinity Problems in Runnels County, Texas*, dated February 1983 (TENRAC, 1983), and conversations with RRC personnel, the source of the saltwater, which has caused the seep, may be from the Coleman Junction Formation. The Coleman Junction is typically encountered at depths ranging from 800 feet to 2,600 feet bgs in Runnels County. This formation consists of highly saline water, which contains sufficient head pressure to flow at the land surface in many areas of Runnels County. Information obtained from *A Survey of the Subsurface Saline Water of Texas: Volume 2 Chemical Analyses of Saline Water*, dated September 1972 (TWDB, 1972), indicated the following analytical results (reported in mg/L) for a water sample collected from the Coleman Junction in Runnels County at a depth of approximately 2,280 feet bgs:

Total Dissolved Solids	Sodium	Calcium	Magnesium	Chloride	Sulfate	Bi-carbonate	pH	Specific Gravity
65,080	22,000	2,033	942	36,524	4,676	861	6.9	1.049

2.2 Borings and Monitor Wells

Seven soil borings were advanced on-site in July 2006 to evaluate the seep and potential source areas. Based on the results of the initial site investigation, additional activities were conducted at the site in April-May 2007 consisting of the advancement of ten soil borings.

Drilling services were performed by a State of Texas licensed Monitoring Well Driller using a truck-mounted air rotary drilling rig under the supervision of a Terracon environmental professional. Rock

and soil samples were collected from select soil borings with five-foot core barrel samplers utilizing air-coring techniques. Additionally, hollow stem auger drilling (MW-7, MW-8, MW-9, MW-14, MW-16 and MW-17) and hand augering (MW-3) were performed at selected soil boring locations based on the observed lithology.

Rock and soil samples from soil borings MW-1, MW-2 (25 to 50 foot interval), MW-3, MW-5, MW-7, MW-8, MW-9, MW-14, MW-16 and MW-17 were collected continuously and observed to document lithology, color, moisture content and sensory evidence of impairment. Rock and soil cuttings were observed to document lithology in soil borings MW-4, MW-6, MW-10, MW-11, MW-12, MW-13 and MW-15. The rock and soil samples and cuttings were field-screened using a photoionization detector (PID – Thermo Environmental Instruments Model 580B OVM or equivalent) to indicate the presence of volatile organic compounds (VOCs). Select rock and soil samples and cuttings were additionally field-screened for chloride utilizing Hach Quantab® strips.

Subsequent to advancement, soil borings MW-1 through MW-17 were converted to flush-mounted groundwater monitoring wells. Detailed lithologic descriptions, monitoring well construction details and PID and chloride field data are presented on the soil boring logs included in Appendix B.

3.0 LABORATORY ANALYTICAL METHODS

The soil samples collected at the site during the initial investigation activities in July 2006 were analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX) using EPA SW-846 Method 8021B, total petroleum hydrocarbons (TPH) using TCEQ Method TX1005 and total chloride using EPA SW-846 Method 300.0.

The groundwater and surface water samples collected at the site during the investigation activities conducted in July-August 2006 were analyzed for BTEX using EPA SW-846 Method 8021B, TPH using TCEQ Method TX1005, total dissolved solids (TDS) using EPA Method 160.1, cations (sodium, potassium, magnesium, calcium) using EPA SW-846 Method 6020, anions (sulfate, nitrate, bromide) using EPA SW-846 Method 300.0, chloride using EPA SW-846 Method 300.0 and Standard Method 4500B, carbonate/bicarbonate alkalinity using EPA SW-846 Method 310.1 and conductivity using EPA SW-846 Method 120.1.

The groundwater and surface water samples collected at the site during the investigation activities conducted in April-May 2007 were analyzed for TDS using EPA Method 160.1, cations (sodium, potassium, magnesium, calcium) using EPA SW-846 Method 6020, anions (chloride, sulfate, nitrate, bromide) using EPA SW-846 Method 300.0, carbonate/bicarbonate alkalinity using EPA SW-846 Method 310.1 and conductivity using EPA SW-846 Method 120.1.

The groundwater and surface water samples collected at the site in July-August 2008 were analyzed for TDS using Standard Method 2540C, cations (sodium, potassium, magnesium, calcium) using

EPA SW-846 Method 6020, anions (chloride, sulfate, nitrate, bromide) using EPA SW-846 Method 300.0, carbonate/bicarbonate alkalinity using Standard Method 2320B and conductivity using Standard Method 2510B.

Duplicate samples, equipment blanks, trip blanks and quality assurance/quality control (QA/QC) samples were collected during the investigation activities as specified in the QAPP.

Laboratory results are summarized in the tables included in Appendix C. The executed chain-of-custody forms and laboratory data sheets for the July and August 2008 monitoring events are provided in Appendix D.

4.0 DATA EVALUATION

4.1 July-August 2006 Sampling Activities

Soil

Laboratory analyses of soil samples collected from monitor wells MW-1, MW-2, MW-3, MW-5 and MW-7 during the initial investigation in July 2006 did not indicate BTEX or TPH concentrations above the laboratory reporting limits.

Laboratory analyses of soil samples collected during the installation of monitor wells MW-1, MW-2, MW-3, MW-5 and MW-7 during the initial investigation in July 2006 indicated chloride concentrations ranging from 730 milligrams per kilogram (mg/kg) to 5,490 mg/kg. The soil sample collected from monitor well MW-3 at a depth of 4.0-5.0 feet bgs indicated a chloride concentration of 5,490 mg/kg. Chloride concentrations detected in the remaining soil samples ranged from 730 to 2,200 mg/kg.

Soil sample results are summarized in Table 1 (Appendix C).

Groundwater

Laboratory analyses of groundwater samples collected from monitor wells MW-1, MW-2, MW-3, MW-4, MW-5 and MW-7 during the initial investigation in July-August 2006 did not indicate BTEX or TPH concentrations above the laboratory reporting limits.

Laboratory analyses of groundwater samples collected from monitor wells MW-1, MW-2, MW-3, MW-4, MW-5 and MW-7 during the initial investigation in July-August 2006 indicated chloride concentrations ranging from 2,140 mg/L to 23,000 mg/L. Monitor well MW-6 was dry during the July-August 2006 investigation.

Groundwater sample results are summarized in Tables 2 and 3 (Appendix C) and shown on Figures 3A, 3B, 3C and 3D (Appendix A).

Surface Water

Laboratory analyses of surface water samples collected from the tributary and Colorado River during the initial investigation in July-August 2006 did not indicate BTEX or TPH concentrations above the laboratory reporting limits.

Laboratory analyses of surface water samples collected from the tributary at and downstream of the lower seep area (near MW-1 and MW-2) during the initial investigation activities in July-August 2006 indicated chloride concentrations ranging from 1,570 mg/L to 2,220 mg/L. The upper seep was inactive during the initial investigation activities in July-August 2006.

Laboratory analyses of surface water samples collected from the Colorado River during the initial investigation activities in July-August 2006 indicated chloride concentrations ranging from 620 mg/L to 621 mg/L.

Surface water sample results are summarized in Tables 6 and 7 (Appendix C) and shown on Figures 4A, 4B, 4C and 4D (Appendix A).

Upper and Lower Seeps

Laboratory analysis of a surface water sample collected from the lower seep near monitor well MW-1 during the initial investigation in July-August 2006 did not indicate BTEX or TPH concentrations above the laboratory reporting limits.

Laboratory analysis of a surface water sample collected from the lower seep near monitor well MW-1 during the initial investigation in July-August 2006 indicated a chloride concentration of 1,060 mg/L. The upper seep was inactive during the initial investigation activities in July-August 2006.

Seep sample results are summarized in Tables 6 and 7 (Appendix C) and shown on Figures 4A, 4B, 4C and 4D (Appendix A).

Based on the BTEX and TPH analytical results obtained during the initial investigation activities in July-August 2006, groundwater, surface water and seep samples were not analyzed for BTEX or TPH during the additional investigation activities in April-May 2007 and July-August 2008.

4.2 April-May 2007 Sampling Activities

Soil

Based on the field screening results and BTEX, TPH and chloride analytical results obtained during the initial investigation activities in July-August 2006, soil samples were not collected during the additional investigation activities in April-May 2007. However, soils were field screened for VOCs with a PID and for chloride utilizing Hach Quantab® strips during the additional investigation activities (as documented on the boring logs in Appendix B) to compare to the initial data to confirm that sampling was not necessary. Field PID and chloride screening readings did not exceed those obtained during the initial investigation.

Groundwater

Laboratory analyses of groundwater samples collected from monitor wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-14, MW-15, MW-16 and MW-17 during the additional investigation activities in April-May 2007 indicated chloride concentrations ranging from 36.6 mg/L to 13,300 mg/L. Monitor well MW-13 was dry during the April-May 2007 investigation.

Surface Water

Laboratory analyses of surface water samples collected from the tributary at and downstream of the lower seep area during the additional investigation activities in April-May 2007 indicated chloride concentrations ranging from 1,920 mg/L to 2,370 mg/L. Laboratory analyses of surface water samples collected from the tributary at and downstream of the upper seep area (near MW-3) during the additional investigation activities in April-May 2007 indicated chloride concentrations ranging from 4,180 mg/L to 5,300 mg/L.

Laboratory analyses of surface water samples collected from the Colorado River during the additional investigation activities in April-May 2007 indicated chloride concentrations ranging from 218 mg/L to 240 mg/L. Surface water samples collected from the Colorado River and Elm Creek located approximately 2,500 feet upstream of the tributary indicated chloride concentrations of 351 mg/L and 158 mg/L, respectively.

Upper and Lower Seeps

Laboratory analysis of a surface water sample collected from the lower seep near monitor well MW-1 during the additional investigation in April-May 2007 indicated a chloride concentration of 1,620 mg/L. Since monitor well MW-3 was installed within the upper seep area, data from MW-3 is considered representative of the upper seep and therefore, no additional samples were collected

from the upper seep.

4.3 July-August 2008 Sampling Activities

Groundwater

Laboratory analyses of groundwater samples collected from monitor wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-8, MW-9 and MW-16 in July 2008 indicated chloride concentrations ranging from 1,930 mg/L to 18,400 mg/L. Monitor wells MW-6, MW-12 and MW-13 were either dry or had an insufficient amount of water for sampling during the July 2008 monitoring event. Monitor wells MW-10, MW-11, MW-14, MW-15 and MW-17 were not scheduled for sampling during the July 2008 monitoring event.

Laboratory analyses of groundwater samples collected from monitor wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-8, MW-9, MW-13 and MW-16 in August 2008 indicated chloride concentrations ranging from 1,750 mg/L to 21,200 mg/L. Monitor wells MW-6 and MW-12 were either dry or had an insufficient amount of water for sampling during the August 2008 monitoring event. Monitor wells MW-10, MW-11, MW-14, MW-15 and MW-17 were not scheduled for sampling during the August 2008 monitoring event.

Surface Water

Laboratory analyses of a surface water sample collected from the tributary at the lower seep area indicated a chloride concentration of 2,240 mg/L in July 2008 and a chloride concentration of 2,440 mg/L in August 2008.

Laboratory analyses of surface water samples collected from the Colorado River up-stream and down-stream of its confluence with the tributary in July 2008 indicated chloride concentrations of 793 mg/L and 787 mg/L, respectively. Laboratory analyses of surface water samples collected from the Colorado River up-stream and down-stream of its confluence with the tributary in August 2008 indicated chloride concentrations of 468 mg/L and 478 mg/L, respectively.

Upper and Lower Seeps

Laboratory analysis of a surface water sample collected from the lower seep near monitor well MW-1 in July 2008 indicated a chloride concentration of 2,140 mg/L. The upper seep was inactive during the sampling activities in July-August 2008. The lower seep could not be sampled in August 2008 due to the small quantity of seepage observed.

4.4 Evaluation of Groundwater Geochemistry and Elevation Data

The monitor wells and selected additional data points relative to evaluation of the seep were surveyed for top-of-casing (TOC) and/or ground surface elevations referenced to a topographic bench mark (USGS topographic quadrangle map of Ballinger, Texas), which is anticipated to be within +/- 5 feet of sea level datum. On August 21, 2006, May 30, 2007, July 7, 2008, and August 4, 2008, Terracon gauged the depth to water in each monitor well and also determined elevations for water in the tributary adjacent to the lower seep, the approximate top of the lower seep, the approximate top of the upper seep and the water elevation in the Colorado River. Groundwater and surface water elevation data are summarized in Table 5 (Appendix C) and shown on Figures 5A, 5B, 5C and 5D (Appendix A).

Analytical data for anion/cation concentrations in water samples collected during the investigation activities were plotted on radial plots which were completed for each of the monitor wells, each of the surface water samples, the lower seep sample, a sample from the Coleman Junction formation (referenced in Section 2.1) and an average of the water well data obtained from the TWDB for the Lueders Formation (referenced in Section 2.1). Interpretation of anion/cation data was based upon the radial plots as well as information contained in *Identification of Sources of Ground-Water Salinization Using Geochemical Techniques*, dated December 1991 (EPA 1991). Radial plots for monitor wells sampled during the April-May 2007 and July-August 2008 sampling events are included as Figures 11-12 (Appendix A).

Based on the radial plots, the composition of groundwater in monitor wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-8, MW-12 and MW-16 was relatively similar. All of these wells appear to have been impacted to varying degrees with sodium/chloride water indicative of oilfield brine or Coleman Junction water. The groundwater composition in monitor wells MW-7, MW-9 and MW-13 was similar to the above wells with the exception of higher levels of calcium and magnesium. These wells also appear to have been impacted from the source(s). Based on the radial plots and chloride concentrations, monitor wells MW-10, MW-11, MW-14, MW-15 and MW-17 do not appear to have been impacted by the source(s). The chloride concentrations in these monitor wells are similar to the average chloride concentration in water wells present in the Lueders Formation.

The elevated sodium in the brine located at the perceived source area MW-5, which is located near the Wolverton Well No. 1, would be expected to go through some ionic exchange processes with the calcium and magnesium present in the Lueders Formation. The sodium/(calcium + magnesium) ratios would be expected to decrease away from the source area. The following sodium/(calcium + magnesium) ratios were calculated for the site monitor wells and indicated decreasing ratios away from the source area with the exception of MW-3. Monitor well MW-3 has periodically exhibited the highest sodium/(calcium + magnesium) ratio, possibly related to the down-gradient movement of residual sodium and chloride.

Ratio of Sodium/(Calcium + Magnesium)				
Monitor Well	**July-August 2006**	**May 2007**	**July 2008**	**August 2008**
MW-1	3.2	1.4	1.8	1.7
MW-2	3.6	1.9	1.8	1.8
MW-3	4.1	4.2	3.1	2.3
MW-4	1.8	1.3	1.2	1.1
MW-5	9.0	2.4	1.9	2.4
MW-6	NA	2.3	NS	NS
MW-7	0.5	1.5	0.5	0.5
MW-8	NA	2.1	1.1	1.1
MW-9	NA	0.7	0.7	0.7
MW-10	NA	1.0	NS	NS
MW-11	NA	0.4	NS	NS
MW-12 (before rain)	NA	1.4	NS	NS
MW-12 (after rain)	NA	1.3	NS	NS
MW-13	NA	Dry	Dry	0.7
MW-14	NA	0.4	NS	NS
MW-15	NA	0.7	NS	NS
MW-16	NA	0.9	1.0	0.9
MW-17	NA	0.5	NS	NS
Coleman Junction	5.4			
Average Water Well	0.6			

NA = Not Applicable. NA because the monitor well was installed in April 2007.
NS = Not Sampled

Based on water composition and groundwater elevation data collected from the site from July 2006 through August 2008, it appears that there are at least two separate groundwater zones present at the site. It appears that there is a shallow water zone present along the tributary which is intercepted by monitor wells MW-1, MW-3, MW-4, MW-6 and MW-12. Elevated chloride levels detected in monitor wells MW-1, MW-3, MW-4, MW-6 and MW-12 may be due to residual chloride impact to this area from the Wolverton Well No. 1. Based on conversations with RRC personnel, prior to the 1998 plugging activities, it appears that salt water may have been seeping from the Wolverton Well No. 1 at a much higher elevation (possibly at the ground surface) than during the July 2006 – August 2008 sampling activities. This may have caused significant chloride loading in the shallow water zone. During the July 2008 and August 2008 monitoring events, chloride levels were at their highest levels in monitor wells MW-1 and MW-3. Chloride levels in MW-4 also increased from 2007 levels. Monitor wells MW-6 and MW-12 were either dry or had an insufficient amount of water for sampling. These elevated chloride levels may be related to down-gradient movement of residual chloride. Groundwater elevations were higher in monitor wells MW-1, MW-3 and MW-4 in May 2007 (apparently due to increased rainfall prior to sampling) than they are currently and this may have resulted in mobilization of additional residual chloride which was detected in these monitor wells in July-August 2008.

Based on prior groundwater elevation data along with the groundwater elevation data collected during the July 2008 and August 2008 monitoring events, it appears that the shallow groundwater zone is only consistently present in proximity to the tributary as evidenced by the consistent presence of groundwater in monitor wells MW-1, MW-3 and MW-4. Groundwater has periodically been present in monitor wells MW-6, MW-10, MW-11, MW-12 and MW-13. These monitor wells are typically dry, but have had sufficient water to sample during at least one of Terracon's sampling events. These monitor wells were screened in a manner to minimize the potential for direct surface water infiltration into these wells. Therefore, the water that has been observed in these monitor wells is likely from a discontinuous and intermittent zone in which groundwater is moving through weathered seams and/or fractures in the limestone. These wells have been observed to be dry, followed by periods of significant water (20 to 25 foot water column in some cases) followed by dry periods.

Additionally, it appears that there is a deeper water zone that was being impacted by the Wolverton Well No. 1. Due to the presence of salt water in monitor well MW-5 and the elevated sodium and chloride levels (indicating a lack of base exchange), it appeared that the Wolverton Well No. 1 was an active source of salt water prior to the 2008 re-plugging activities. The elevated chloride levels present in monitor well MW-2 (compared to MW-1) appeared to indicate that this well was being impacted in the deeper water bearing zone by the Wolverton Well No. 1.

The composition of the water samples from the lower seep (Lower Seep-1) and tributary (SW-Trib-1, SW-Trib-2 and SW-Trib-3) is similar to the composition found in monitor well MW-1. Chloride levels were higher in the tributary than in the lower seep; however, this may be due to evaporation in the tributary which would concentrate the anions and cations resulting in higher chloride concentrations. Comparison of results from multiple sampling events generally indicates chloride levels were higher in MW-1 than in SW-Trib-1 and SW-Trib-2; however, the chloride level in surface water sample SW-Trib-3, which was the furthest downstream sample collected from the tributary, was higher than the chloride levels detected in samples MW-1, Lower Seep-1, SW-Trib-1 and SW-Trib-2. This may indicate that groundwater with higher chloride levels than those identified in MW-1 is seeping into the tributary further downstream or it may be a result of evaporation in the tributary.

The composition of the water samples collected from the tributary in April-May 2007 (SW-Trib-4, SW-Trib-5 and SW-Trib-6) adjacent to the upper seep and MW-3 are similar to the composition of groundwater in monitor well MW-3.

At this time, it does not appear that the deeper salt water zone is directly impacting the tributary. It appears that this zone is discharging into the alluvium present along the Colorado River (intercepted by monitor wells MW-7, MW-8, MW-9, MW-14, MW-16 and MW-17). The Colorado River was indicated to be a losing stream based on the groundwater elevation in monitor well MW-7 in July-August 2006; however, based on groundwater elevation data for monitor wells MW-7, MW-8, MW-9, MW-14, MW-16 and MW-17 in April-May 2007, it appeared that the Colorado River was a gaining

stream at that time. Based on groundwater elevation data for monitor wells MW-7, MW-8, MW-9, MW-14, MW-16 and MW-17 in July-August 2008, it appears that the Colorado River is currently a gaining stream. The chloride concentrations in monitor wells MW-7, MW-8, MW-9 and MW-16 are at their highest levels since Terracon began monitoring; and chloride concentrations in the Colorado River in July 2008 were also at their highest levels since Terracon began monitoring in 2006. This data supports the conclusion that the Colorado River is currently a gaining stream.

It is also likely that water from the shallow zone (present in monitor wells MW-1, MW-3, MW-4, MW-6 and MW-12) is discharging into the alluvium. During our initial site investigation activities in July-August 2006, Terracon observed that water from the seep present in the tributary was not flowing into the Colorado River indicating that, due to the low flow in the tributary, it was likely infiltrating downward into the alluvium along the Colorado River. Terracon's initial investigation activities were performed during a dry time of year. During the additional investigation activities in April-May 2007, Terracon observed the tributary to be flowing directly into the Colorado River. However, during the July-August 2008 monitoring events, water in the tributary was only observed in proximity to monitor wells MW-1 and MW-2 and was not observed to be flowing further downstream on the surface. Therefore, it is likely that this water is currently infiltrating downward into the alluvium along the Colorado River and eventually into the river.

The composition of the water samples from the Colorado River are very similar to one another. However, the water samples collected from the Colorado River in April-May 2007 indicated higher percentages of bicarbonate and lower percentages of sulfate compared to the samples collected from the Colorado River in July-August 2006 and July-August 2008. This appears to be related to the influx of fresh water (rainfall) which typically has low sulfate concentrations. Additionally, chloride concentrations were at their lowest levels in the Colorado River during the May 2007 monitoring event further documenting the effect of fresh water influx into the Colorado River.

The composition of the water sample from the Coleman Junction is most similar to the composition of the water from monitor wells MW-2, MW-3, MW-5 and MW-6 with the exception of higher chloride and sodium concentrations in the Coleman Junction. The presence of lower chloride concentrations in monitor well MW-5 (located adjacent to the source area – Wolverton Well No. 1) appears to be related to the mixing of the water from the Coleman Junction with fresh water present in the deep freshwater zone as evidenced by the presence of a deep freshwater zone with low salinity intercepted by monitor well MW-15, which is located outside of the source area.

5.0 EVALUATION OF SEEP QUANTITY

As part of the site investigation activities, Terracon estimated the flow volume of the upper and lower seeps. To estimate the flow volumes of the seeps, Terracon performed one rising head and one falling head slug test on monitor wells MW-1 and MW-3 to characterize the hydraulic conductivity of the soils/rock and evaluate the yield of the shallow groundwater bearing zone. Rising head and

falling head slug tests were also performed on additional site monitor wells, as detailed below, to evaluate site conditions.

The Bouwer and Rice method was used to evaluate the hydraulic conductivity of the soils/rock in the vicinity of monitor wells MW-1 and MW-3. The sustained yield of a water well completed in soils and shallow bedrock was evaluated using the nonequilibrium well function equation described in Attachment B of the TCEQ guidance document *RG-366-TRRP-8 Groundwater Classification*, dated March 2003 (TCEQ, 2003).

The hydraulic conductivities and estimated well yields calculated for MW-1, MW-2, MW-3, MW-4, MW-5, MW-7, MW-9 and MW-14 are summarized in the table below.

Monitor Well	Date	Hydraulic Conductivity (centimeters per second)	Estimated Well Yield (gallons per day)
MW-1 – Rising Head	July 21, 2006	$1.9xE^{-4}$	300
MW-1 – Falling Head	July 21, 2006	$4.8xE^{-4}$	600
MW-2 – Rising Head	July 21, 2006	$7.8\text{-}E^{-6}$	48
MW-2 – Falling Head	July 21, 2006	$1.6xE^{-5}$	89
MW-3 – Rising Head	April 26, 2007	$1.4xE^{-6}$	3
MW-3 – Falling Head	April 26, 2007	$1.3xE^{-5}$	14
MW-4 – Rising Head	August 15, 2006	$8.8xE^{-6}$	28
MW-4 – Falling Head	August 15, 2006	$1.2xE^{-5}$	20
MW-5 – Bail Down Test	April 26, 2007	Not Determined	3
MW-7 – Rising Head	May 30, 2007	$1.7xE^{-3}$	1,000
MW-7 – Falling Head	May 30, 2007	$5.6xE^{-4}$	400
MW-9 – Rising Head	May 30, 2007	$1.4xE^{-5}$	12
MW-14 – Rising Head	May 30, 2007	$3.1xE^{-5}$	29

Based on the slug test data from monitor well MW-1, the flow rate of the lower seep was estimated to be approximately 35 to 106 gallons per day. Based on the slug test data from monitor well MW-3, the flow rate of the upper seep was estimated to be approximately 12 to 36 gallons per day. Seep quantity calculations are provided in Appendix E.

Based on our site observations to date, it is likely that seepage rates will vary significantly throughout the year based on the weather conditions. However, the above estimated seepage rates appear to be a reasonable estimate based on Terracon's site observations.

6.0 IMPLEMENTATION OF BMP(S)

Based on the investigation and monitoring data collected from July 2006 through May 2007, Terracon recommended re-entering and plugging of the Wolverton Well No. 1 and a monitoring program for the groundwater, seeps and surface water in the tributary and Colorado River. The RRC subsequently evaluated this recommended BMP and chose to proceed with the plugging of the Wolverton Well No. 1. The Wolverton Well No. 1 was plugged in June 2008.

Following completion of the June 2008 plugging activities associated with the Wolverton Well No. 1, Terracon conducted two groundwater monitoring events in July and August 2008 on select monitor wells to evaluate current site conditions. The results are summarized in Section 4.0 of this report.

7.0 CONCLUSIONS

Following discovery of the Ballinger seep and subsequent investigation activities performed by the RRC, the Wolverton Well No. 1 was identified as a possible source of the seep based upon the presence of salt crystals on the ground surface covering an approximate 15 ft x 150 ft area from the Wolverton Well No. 1 toward the tributary; the fact that the well was determined to have been an uncased cable tool dry hole which was drilled in 1935; and the location of the Wolverton Well No. 1 approximately 350 feet from the seep. RRC staff observed saltwater at a depth of approximately 28 feet below the ground surface (bgs) in this well during the 1998 plugging activities.

Based on an evaluation of anion and cation data collected at the site, the elevated sodium in the brine located at the perceived source area MW-5, which is located near the Wolverton Well No. 1, would be expected to go through some ionic exchange processes with the calcium and magnesium present in the Lueders Formation. The sodium/(calcium + magnesium) ratios would be expected to decrease away from the source area. The sodium/(calcium + magnesium) ratios calculated for the site monitor wells indicated decreasing ratios away from the source area (MW-5/Wolverton Well No. 1) with the exception of monitor well MW-3. Monitor well MW-3 has periodically exhibited the highest sodium/(calcium + magnesium) ratio.

Based on conversations with RRC personnel, prior to the 1998 plugging activities, it appears that salt water may have been seeping from the Wolverton Well No. 1 at a much higher elevation (possibly at the ground surface) than during the July 2006 – August 2008 sampling activities. This may have caused significant sodium and chloride loading in the shallow water zone. The elevated sodium/(calcium + magnesium) ratios calculated for monitor well MW-3 may be related to down-gradient movement of residual sodium and chloride. Additionally, results of groundwater analyses from monitor wells situated topographically up-gradient from monitor well MW-3, near other potential sources of elevated salinity, did not appear to indicate the presence of alternate and/or additional sources of the seep.

Based on review of available RRC file information, conversations with RRC personnel, site observations and an evaluation of field and laboratory data, it appears that the Wolverton Well No. 1 is the likely source of the elevated salinity in the Ballinger seep.

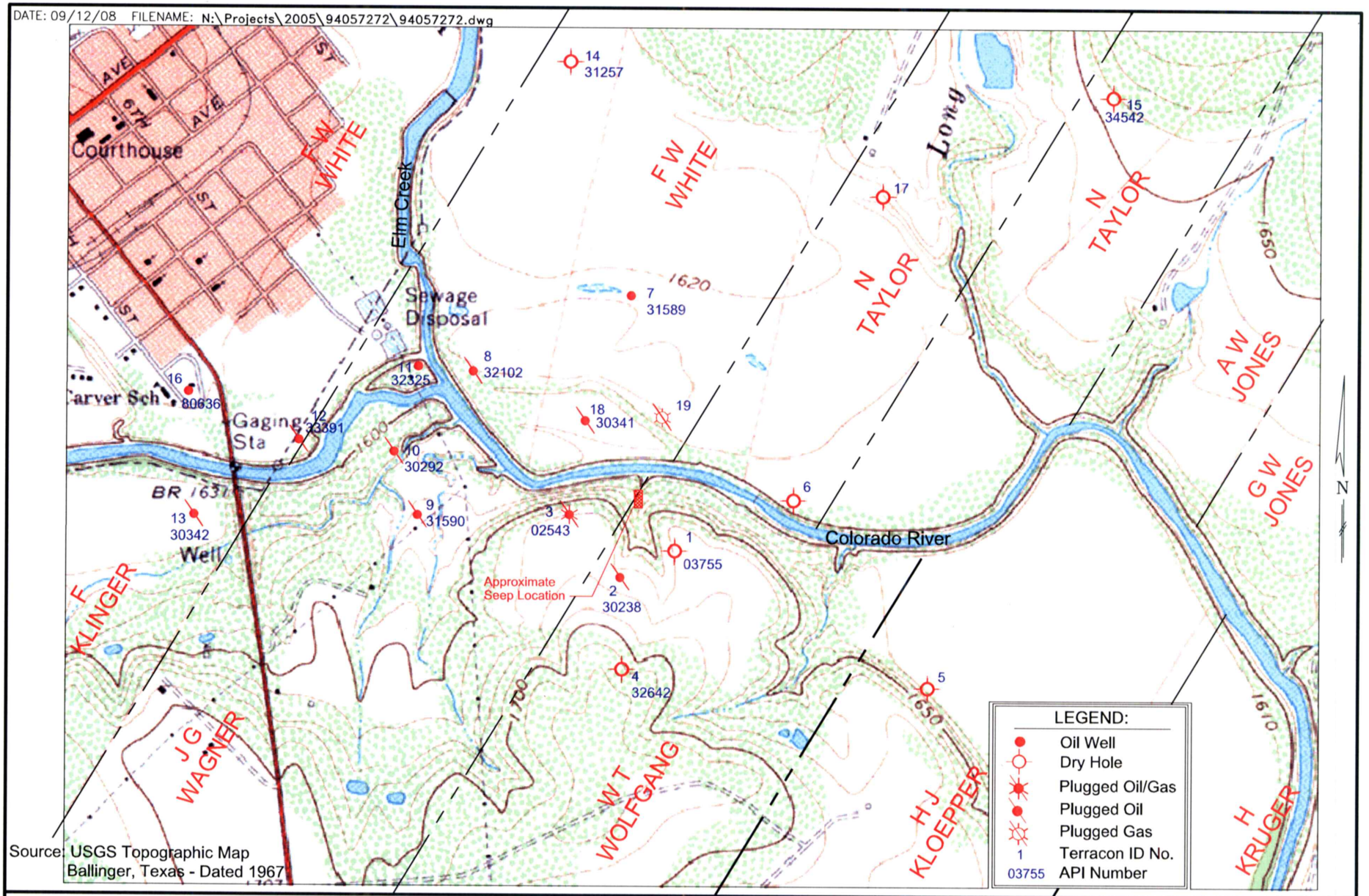
The complex geology and groundwater (fresh and saline)/surface water interactions at the site make it difficult to evaluate the impact of the re-entering and plugging of the Wolverton Well No. 1 over the relatively short timeframe between the re-entering and plugging in June 2008 and the subsequent groundwater and surface water sampling in July- August 2008. It is likely that significant residual chloride is present at the site and it may take a long period of time for the chloride concentrations to begin significantly decreasing. Chloride levels in both the shallow and deep groundwater zones should begin to gradually decline; however, contaminant mobilization due to the discontinuous intermittent groundwater zones may cause seasonal increases in chloride concentrations.

Development of a quarterly or semi-annual monitoring program for the monitor wells, seeps and surface water in the tributary and Colorado River will be required to document the effectiveness of the BMP (re-plugging of the Wolverton Well No. 1).

Terracon

APPENDIX A

Figure 1 – Topographic Map
Figure 2 – Site Plan
Figure 3A – Chloride Concentrations in Groundwater (July-August 2006)
Figure 3B – Chloride Concentrations in Groundwater (May 2007)
Figure 3C – Chloride Concentrations in Groundwater (July 2008)
Figure 3D – Chloride Concentrations in Groundwater (August 2008)
Figure 4A – Chloride Concentrations in Surface Water (July 2006)
Figure 4B – Chloride Concentrations in Surface Water (May 2007)
Figure 4C – Chloride Concentrations in Surface Water (July 2008)
Figure 4D – Chloride Concentrations in Surface Water (August 2008)
Figure 5A – Water/Groundwater Elevations (August 21, 2006)
Figure 5B – Water/Groundwater Elevations (May 30, 2007)
Figure 5C – Water/Groundwater Elevations (July 7, 2008)
Figure 5D – Water/Groundwater Elevations (August 4, 2008)
Figure 6 – Cross-Section A-A'
Figure 7 – Cross-Section B-B'
Figure 8 – Cross-Section C-C'
Figure 9 – Cross-Section D-D'
Figure 10 – Cross-Section E-E'
Figure 11A – Radial Plots of Anion/Cation Data (July-August 2008)
Figure 11B – Radial Plots of Anion/Cation Data (July-August 2008)
Figure 11C – Radial Plots of Anion/Cation Data (July-August 2008)
Figure 12 – Anion/Cation Data for Groundwater (May 2007)



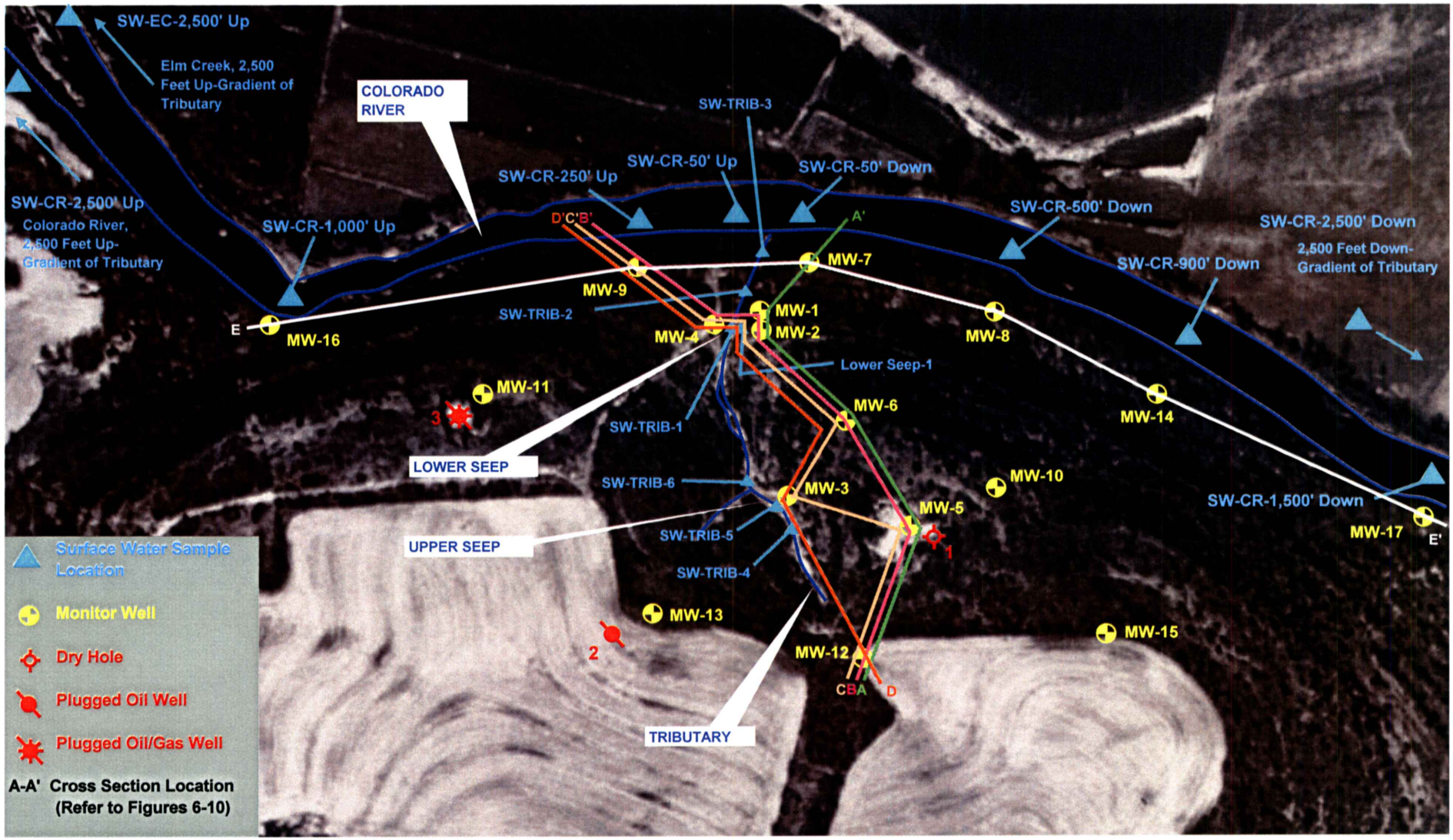
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BALLINGER SEEP

RUNNELS COUNTY, TEXAS

Terracon **Project No.: 94057272**

FIGURE 1: TOPOGRAPHIC MAP



Source: www.terraserver.homeadvisor.msn.com, 1995 Aerial Photograph

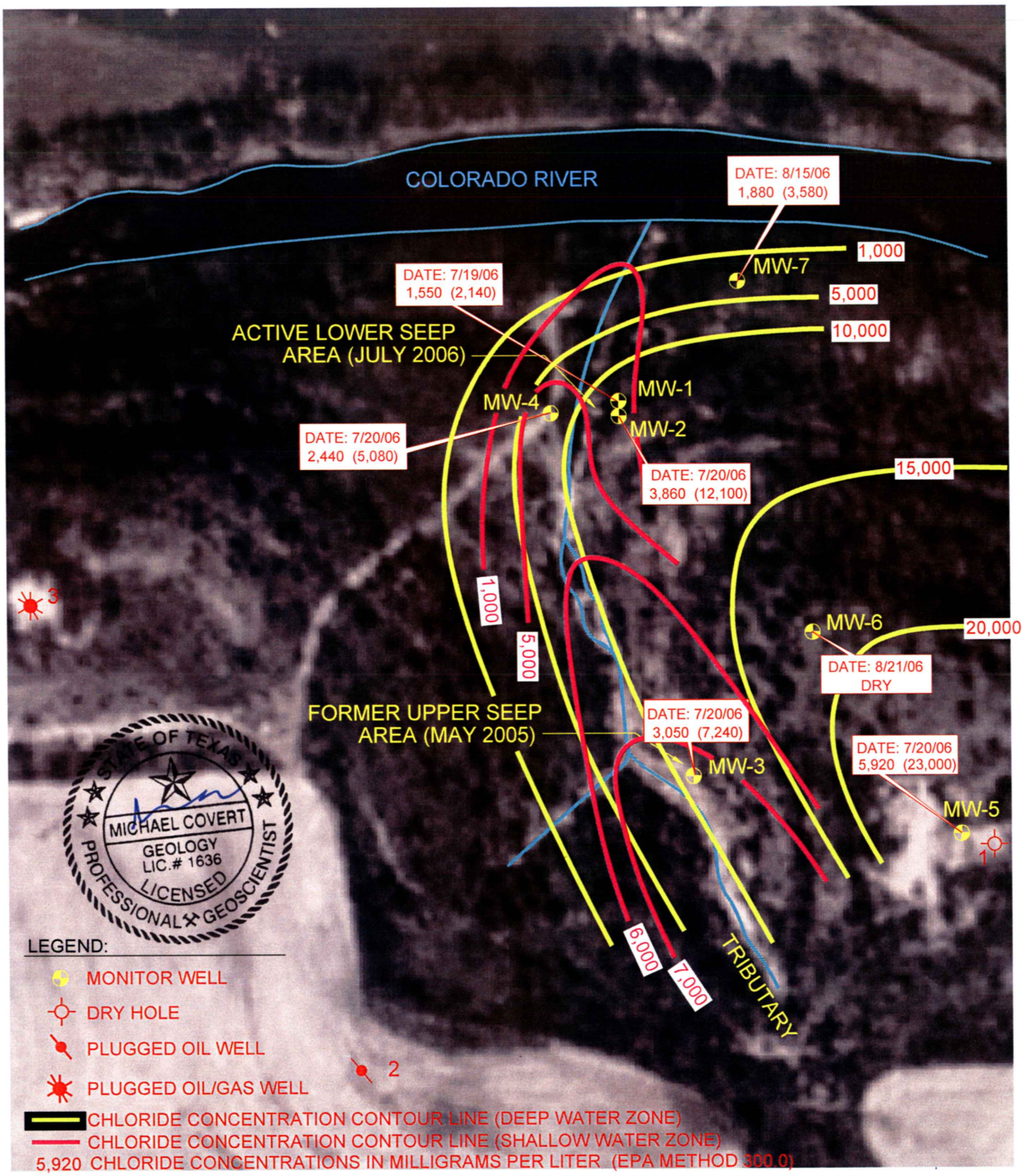
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 155 310 FEET
APPROXIMATE SCALE

Terracon Project No. 94057272C

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RUNNELS COUNTY, TEXAS

FIGURE 2: SITE PLAN



Date: 08/13/08 N:\Projects\2005\94057272\94057272-creek.dwg Layout: creek

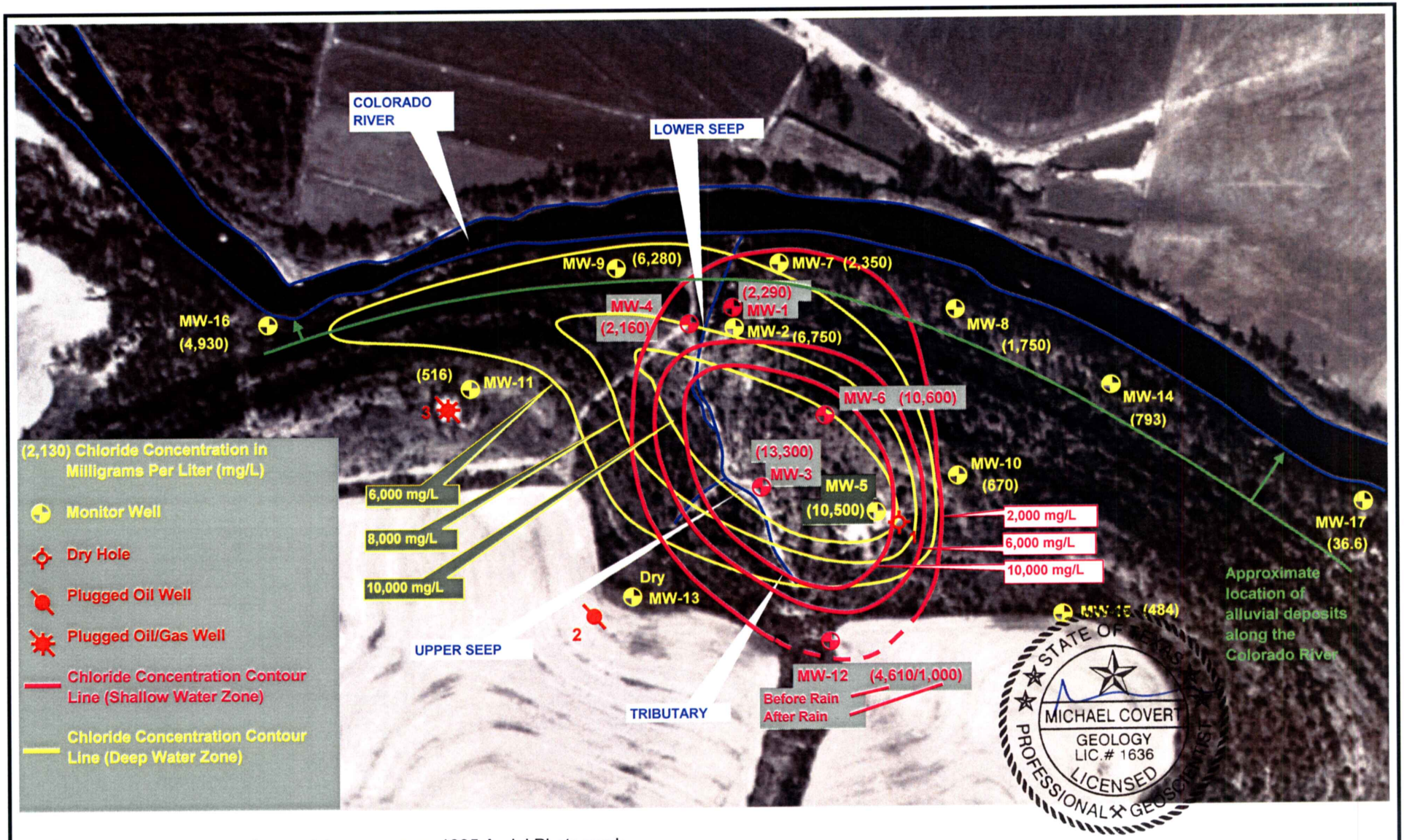
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 75 150 FEET
APPROXIMATE SCALE

BALLINGER SEEP
RUNNELS COUNTY, TEXAS

Terracon Project No.: 94057272

FIGURE 3A: CHLORIDE CONCENTRATIONS IN GROUNDWATER (JULY-AUGUST 2006)



Source: www.terraserver.homeadvisor.msn.com, 1995 Aerial Photograph

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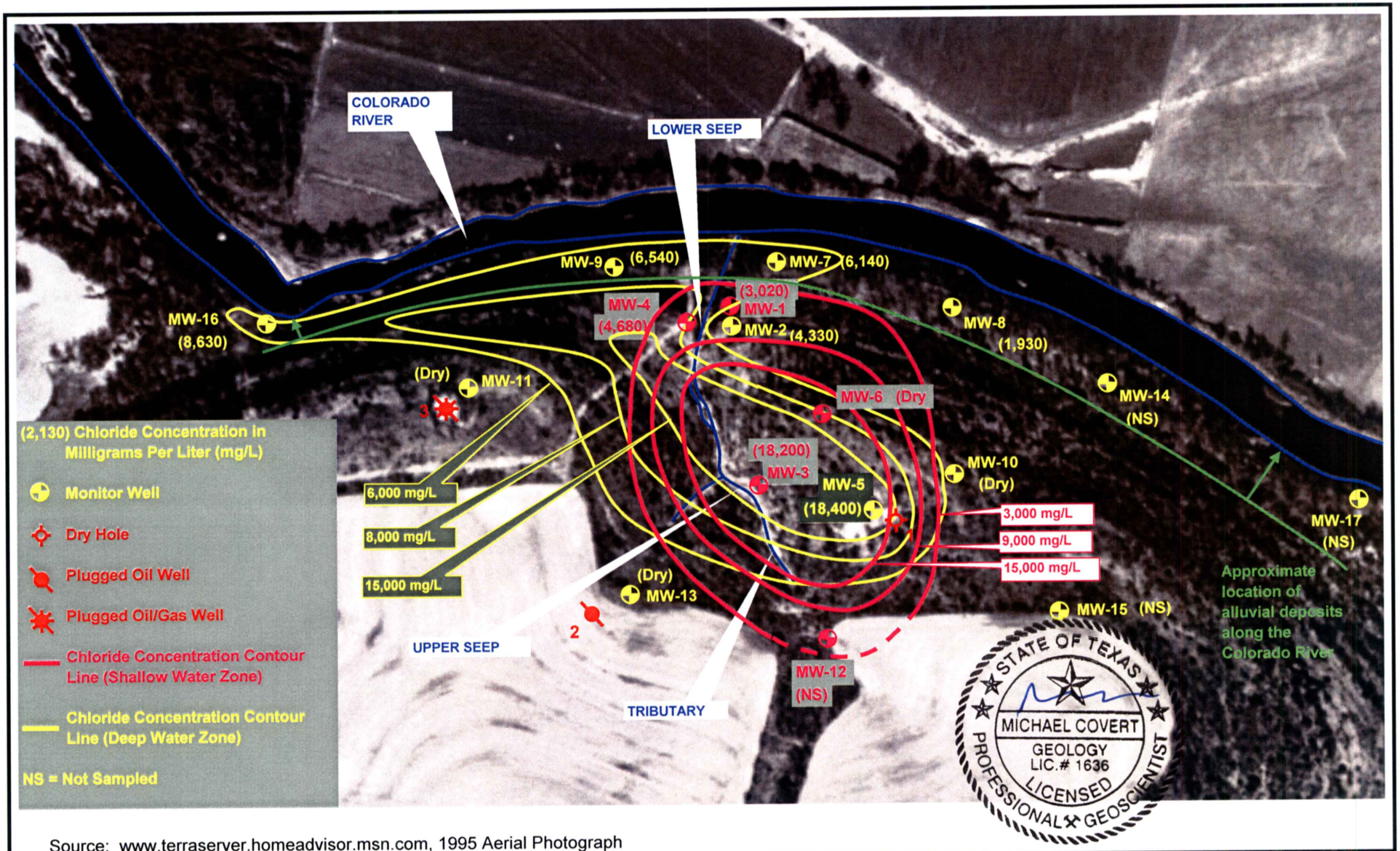
0 155 310 FEET

APPROXIMATE SCALE

Terracon Project No. 94057272C

BALLINGER SEEP
RUNNELS COUNTY, TEXAS

FIGURE 3B: CHLORIDE CONCENTRATIONS IN GROUNDWATER (MAY 2007)



Source: www.terraserver.homeadvisor.msn.com, 1995 Aerial Photograph

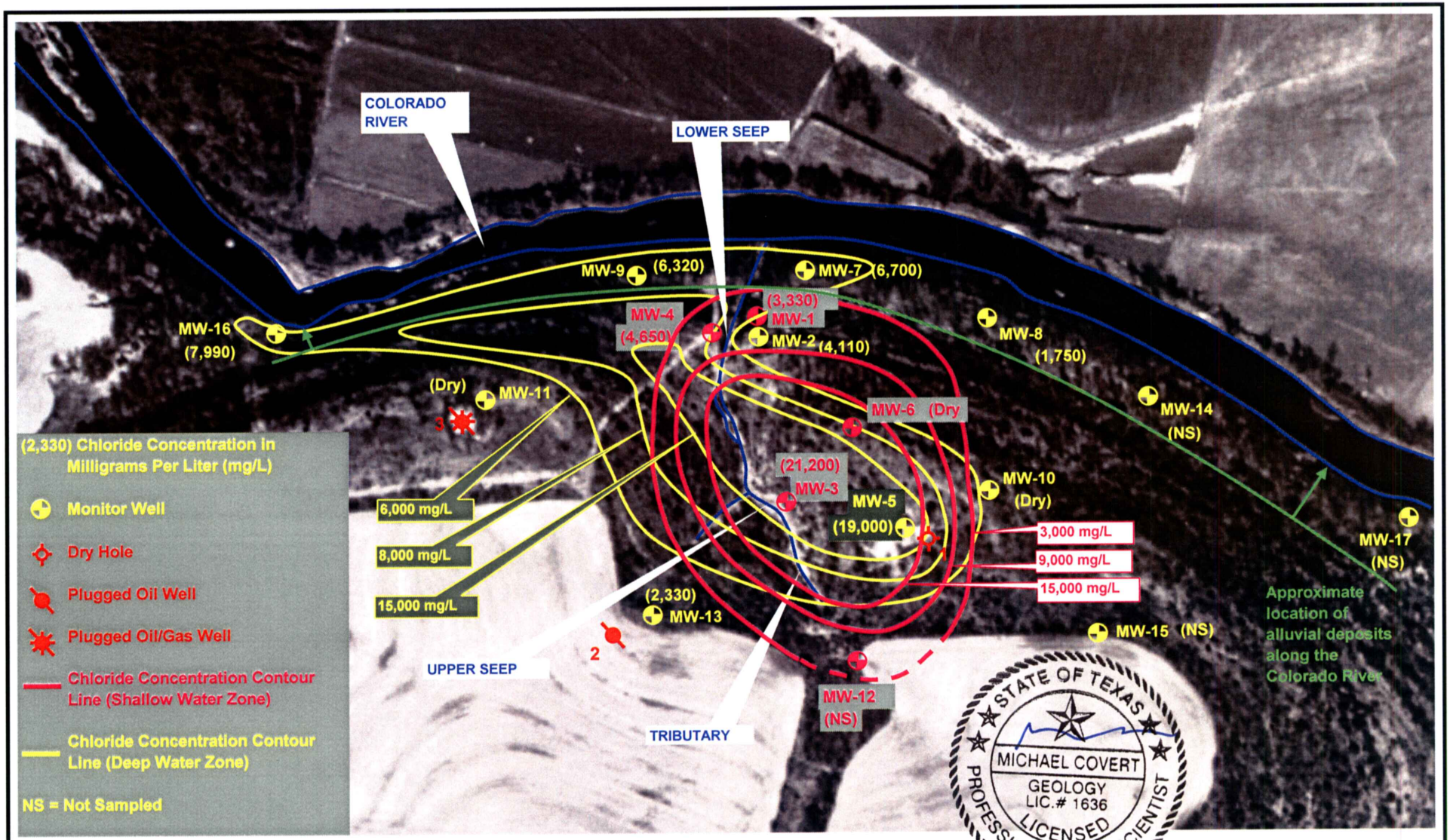
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0 155 310 FEET
APPROXIMATE SCALE

Terracon Project No. 94057272C

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FIGURE 3C: CHLORIDE CONCENTRATIONS IN GROUNDWATER (JULY 2008)



Source: www.terraserver.homeadvisor.msn.com, 1995 Aerial Photograph

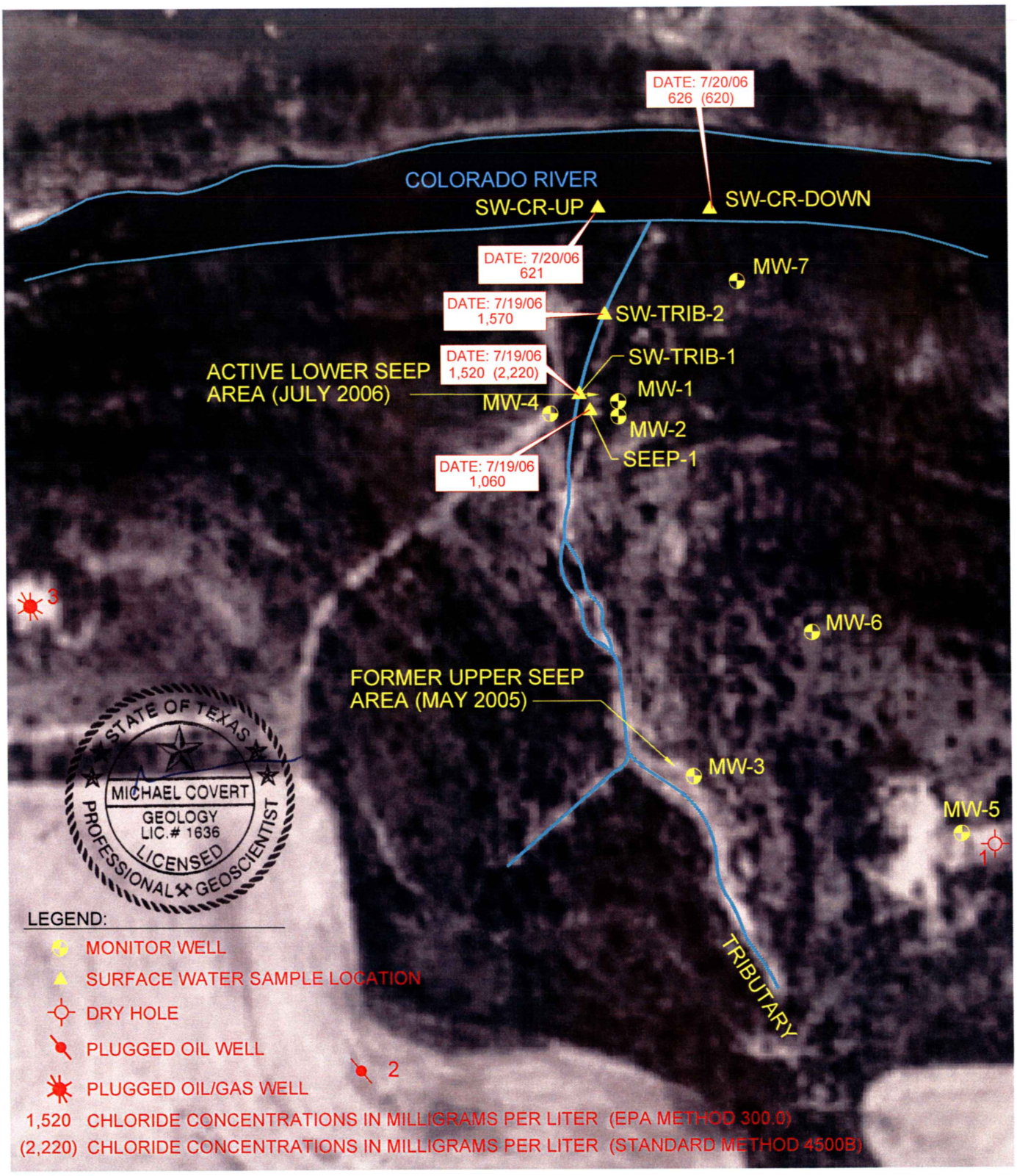
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0 155 310 FEET
APPROXIMATE SCALE

Terracon Project No. 94057272C

BALLINGER SEEP
RUNNELS COUNTY, TEXAS

FIGURE 3D: CHLORIDE CONCENTRATIONS IN GROUNDWATER (AUGUST 2008)



SOURCE: HTTP://TERRASERVER.HOMEADVISOR.MSN.COM, 1995 AERIAL PHOTOGRAPH.

Date: 08/13/08 N:\Projects\2005\94057272\94057272-creek.dwg Layout: creek

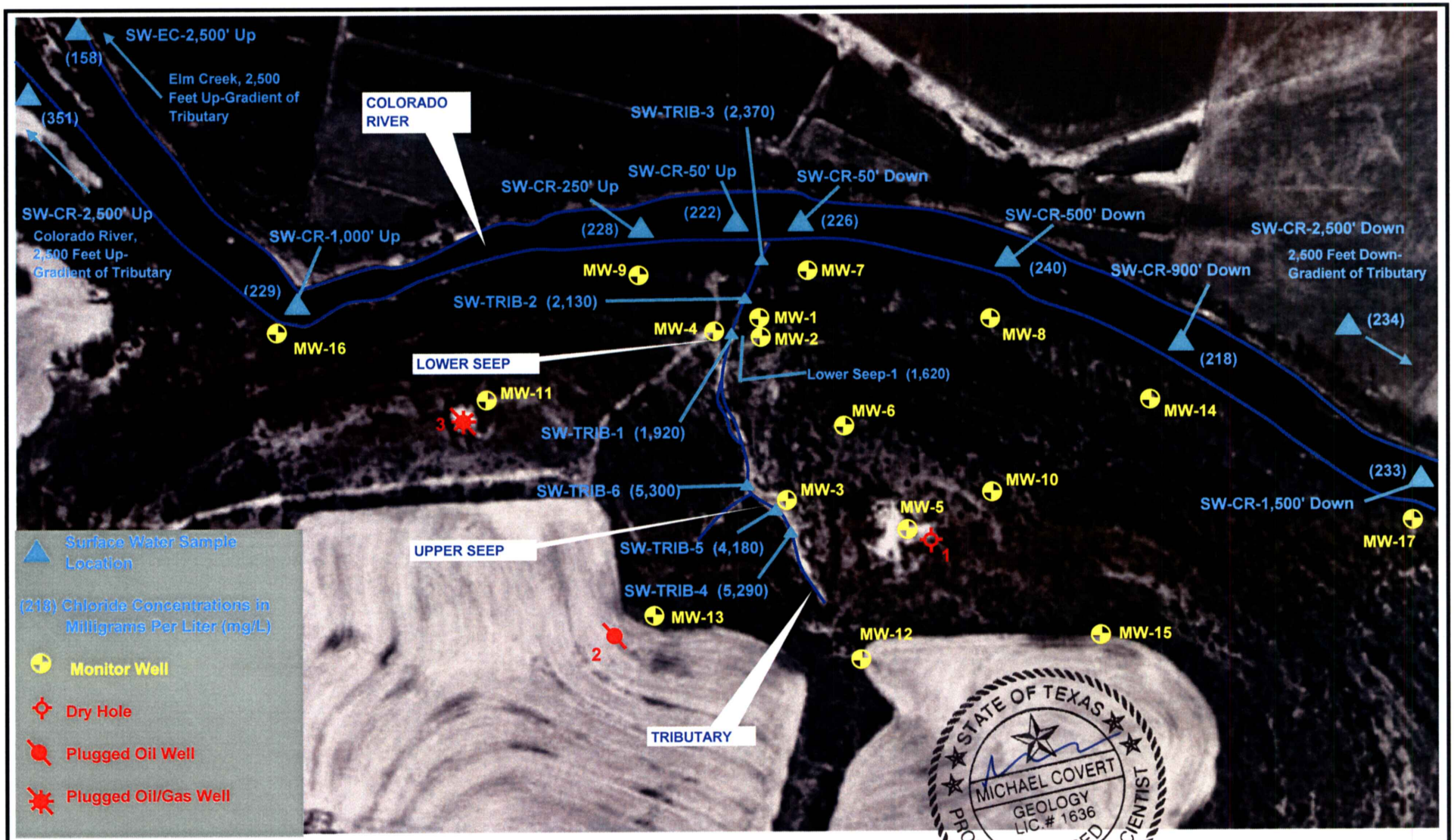
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0 75 150 FEET
APPROXIMATE SCALE

BALLINGER SEEP
RUNNELS COUNTY, TEXAS

Terracon Project No.: 94057272

FIGURE 4A: CHLORIDE CONCENTRATIONS IN SURFACE WATER (JULY 2006)



Source: www.terraserver.homeadvisor.msn.com, 1995 Aerial Photograph

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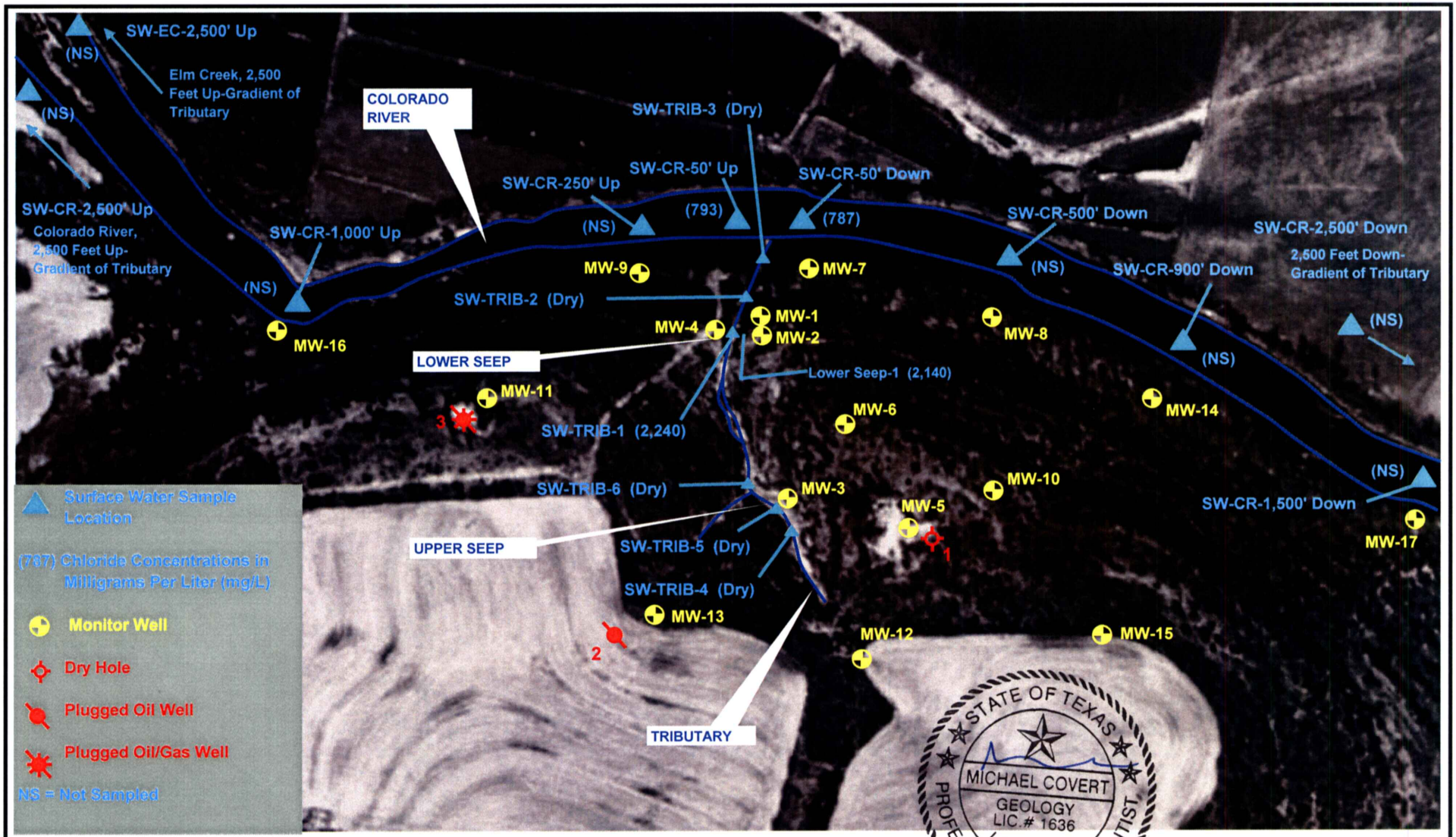
0 155 310 FEET

APPROXIMATE SCALE

Terracon Project No. 94057272C

BALLINGER SEEP
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FIGURE 4B: CHLORIDE CONCENTRATIONS IN SURFACE WATER (MAY 2007)



Source: www.terraserver.homeadvisor.msn.com, 1995 Aerial Photograph

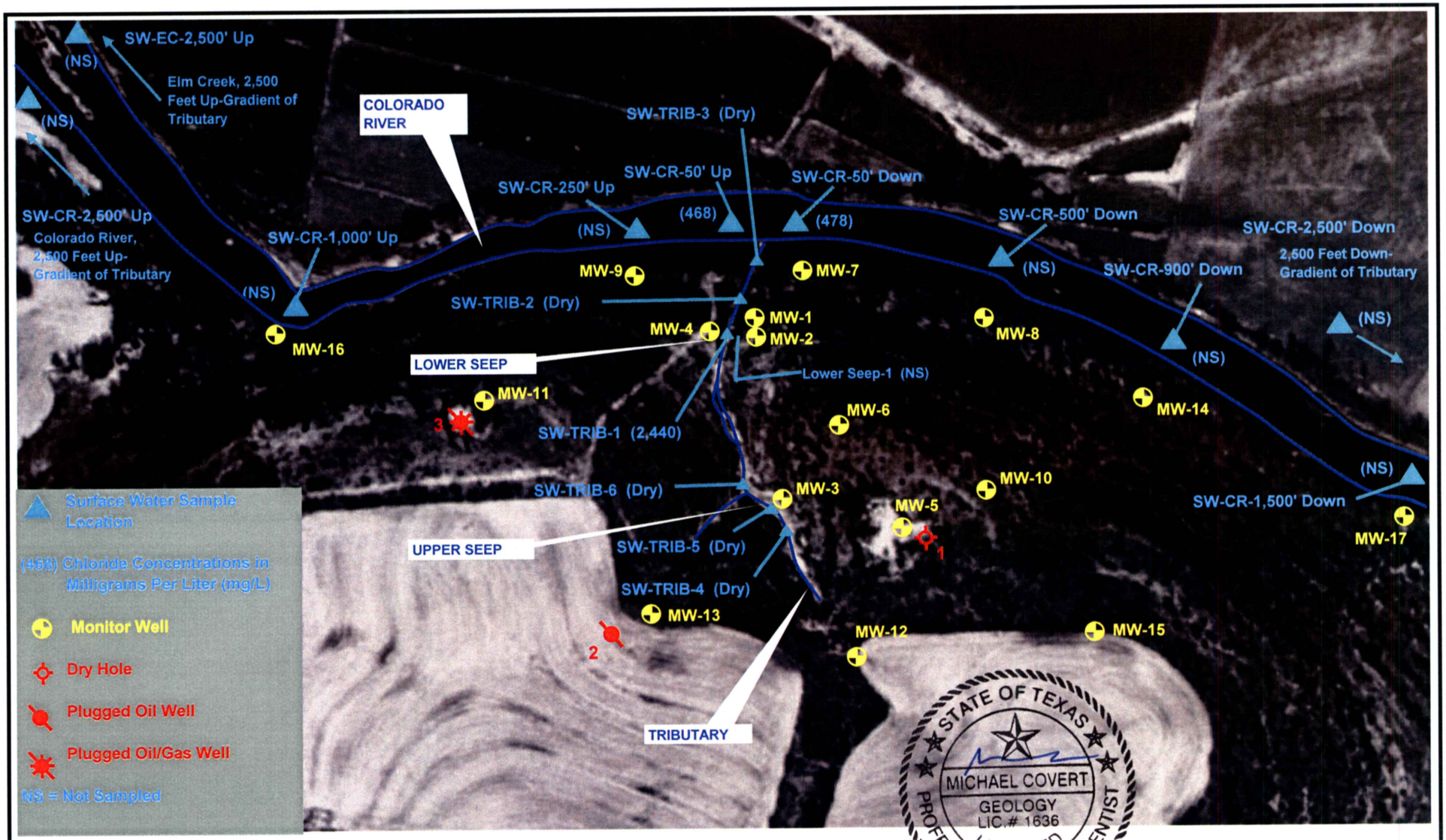
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 155 310 FEET
APPROXIMATE SCALE

Terracon Project No. 94057272C

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FIGURE 4C: CHLORIDE CONCENTRATIONS IN SURFACE WATER (JULY 2008)



Source: www.terraserver.homeadvisor.msn.com, 1995 Aerial Photograph

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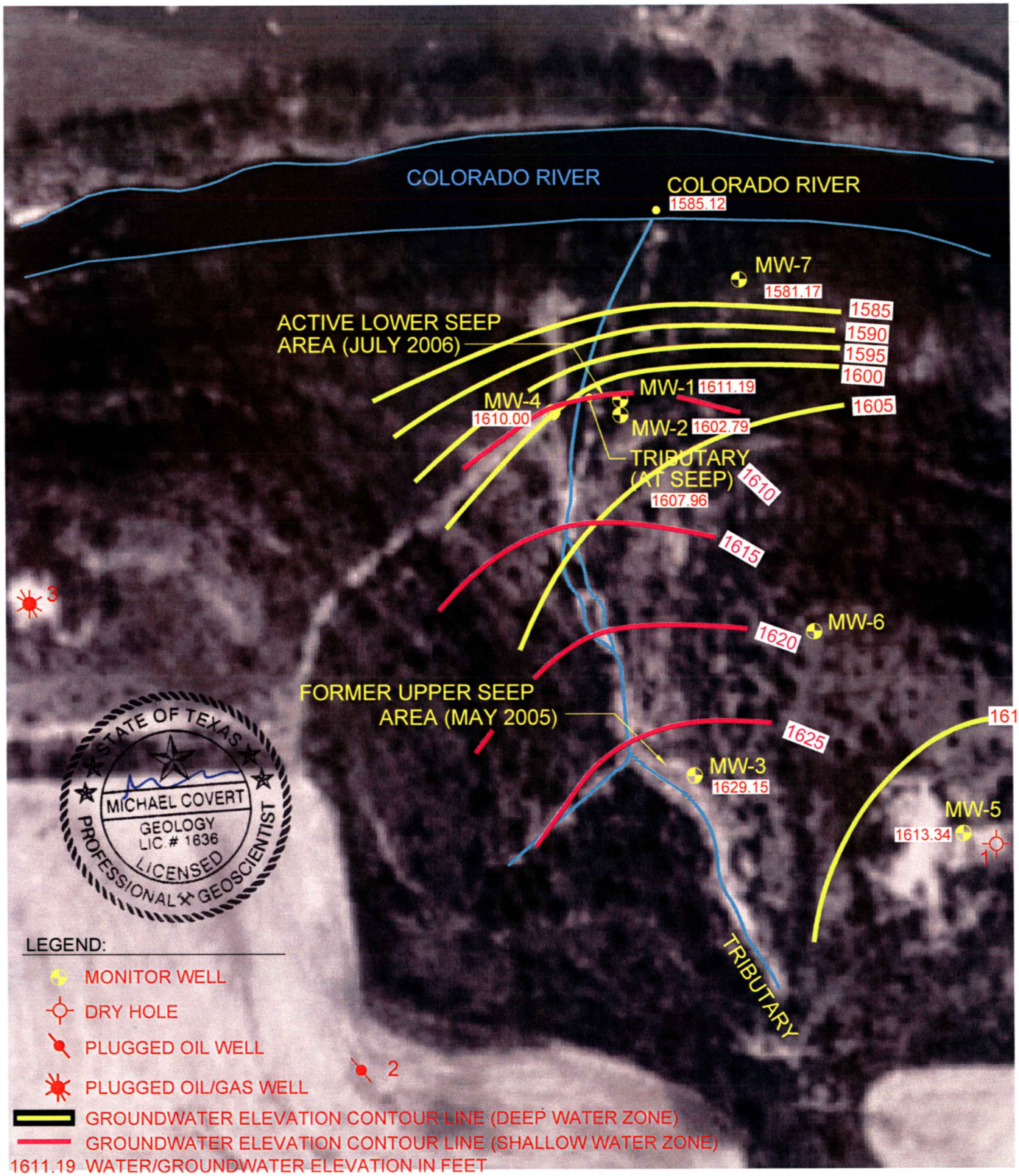
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 155 310 FEET
APPROXIMATE SCALE

Terracon Project No. 94057272C

BALLINGER SEEP
RUNNELS COUNTY, TEXAS

FIGURE 4D: CHLORIDE CONCENTRATIONS IN SURFACE WATER (AUGUST 2008)



SOURCE: HTTP://TERRASERVER.HOMEADVISOR.MSN.COM, 1995 AERIAL PHOTOGRAPH.

Date: 08/13/08 N:\Projects\2005\94057272\94057272-creek.dwg Layout: creek

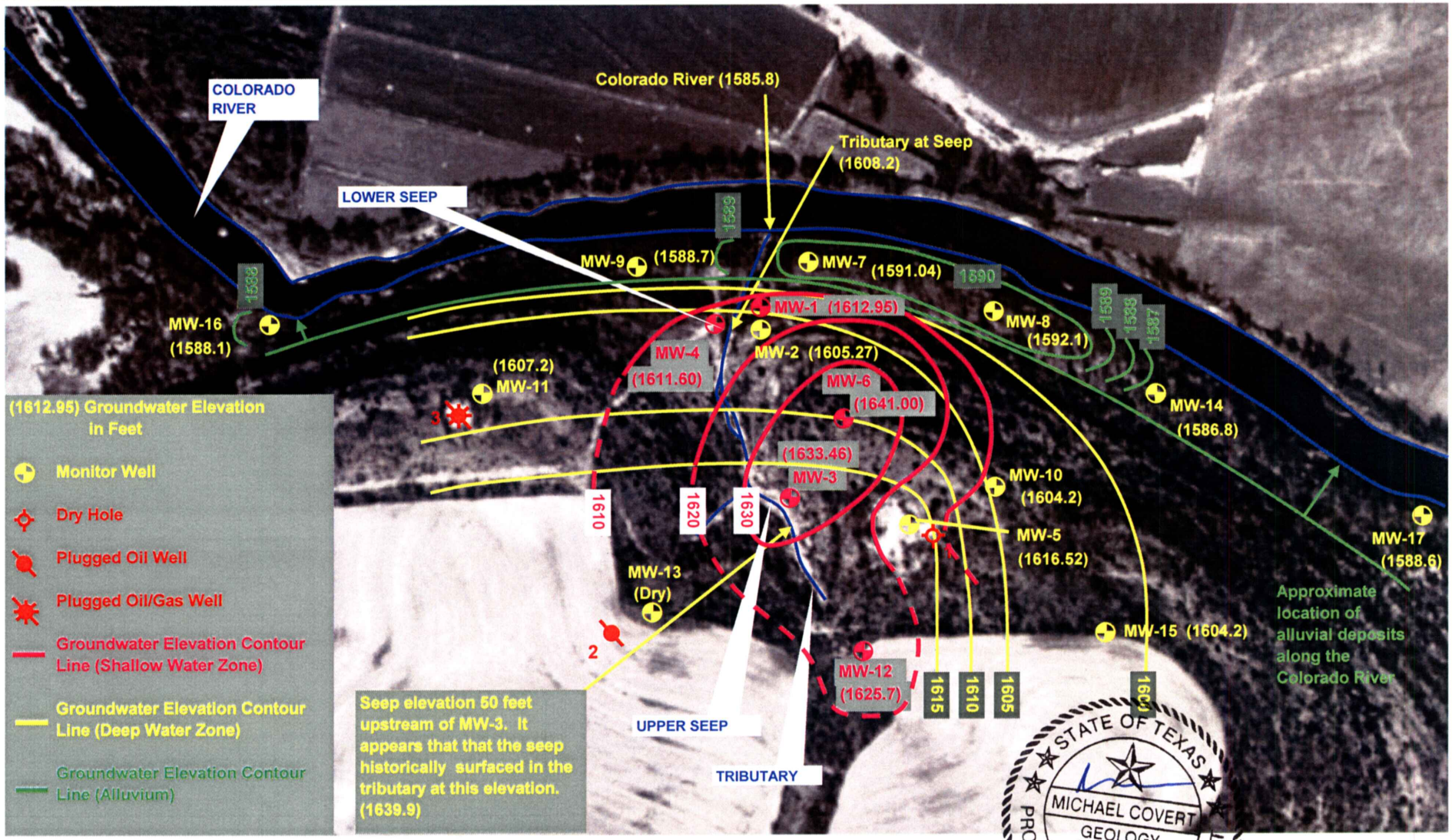
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 75 150 FEET
APPROXIMATE SCALE

BALLINGER SEEP
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FIGURE 5A: WATER/GROUNDWATER ELEVATIONS (AUGUST 21, 2006)



Source: www.terraserver.homeadvisor.msn.com, 1995 Aerial Photograph

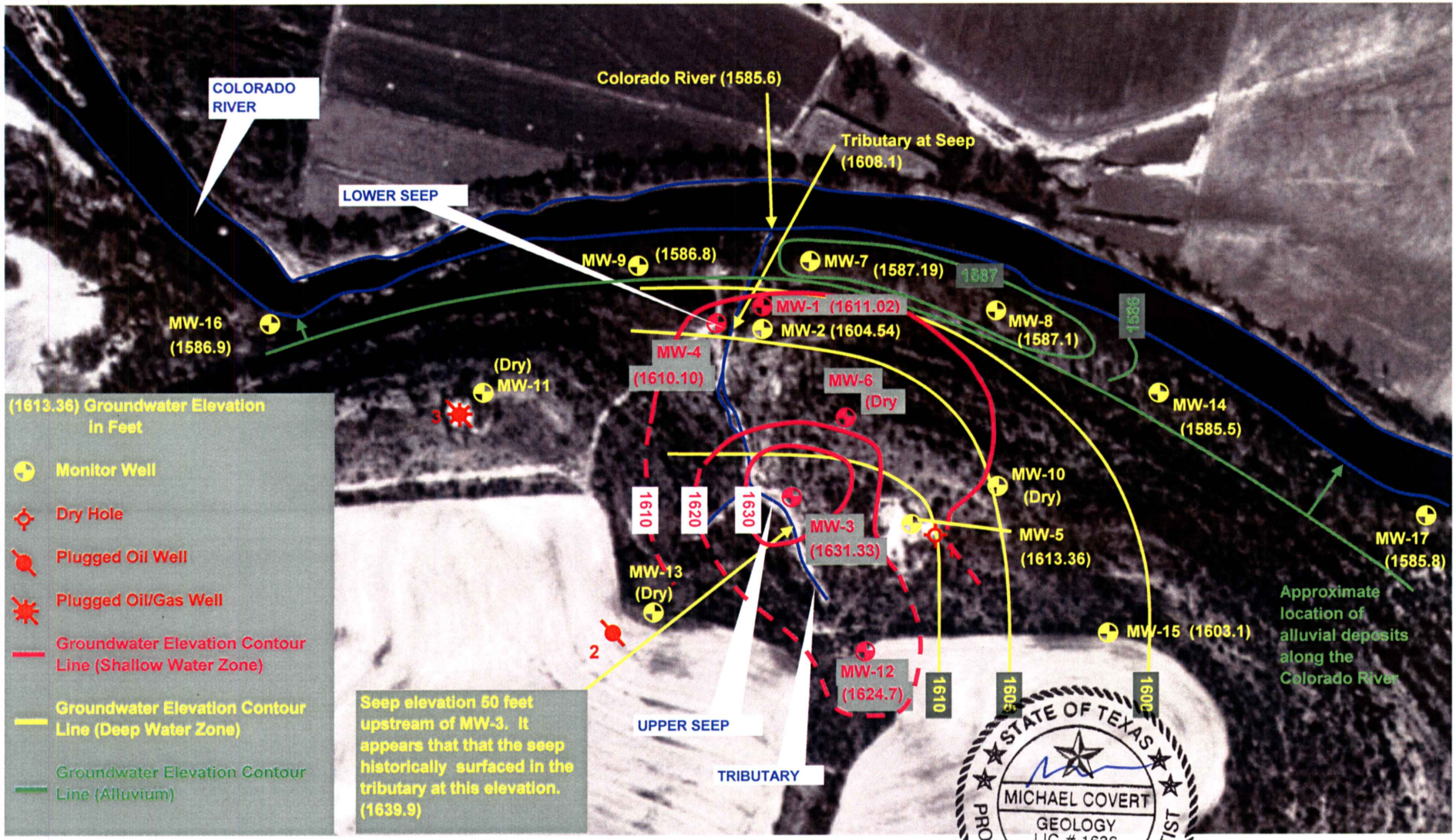
THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 155 310 FEET
APPROXIMATE SCALE

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FIGURE 5B: WATER/GROUNDWATER ELEVATIONS (MAY 30, 2007)



Source: www.terraserver.homeadvisor.msn.com, 1995 Aerial Photograph

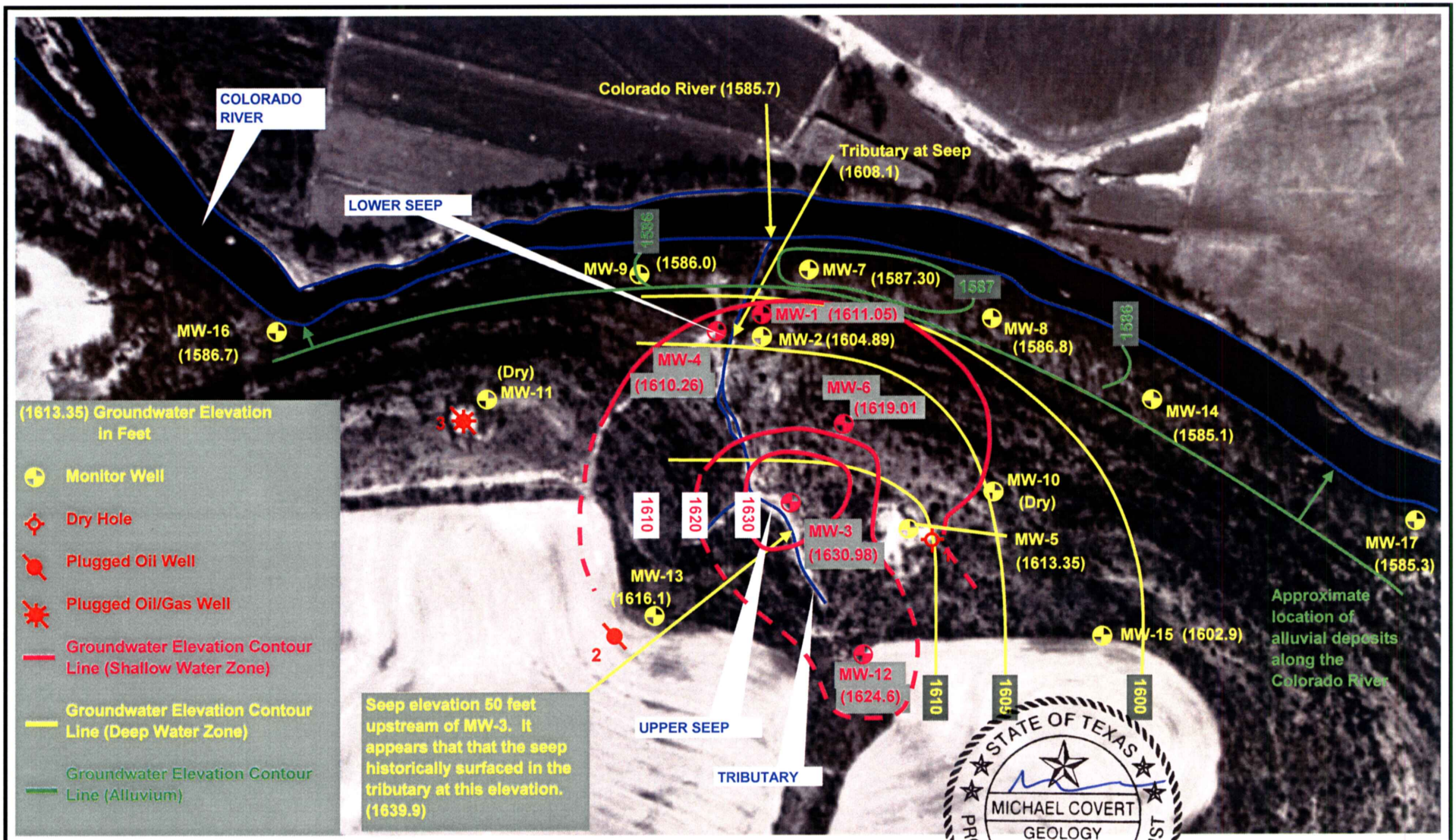
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0 155 310 FEET
APPROXIMATE SCALE

Terracon Project No. 94057272C

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FIGURE 5C: WATER/GROUNDWATER ELEVATIONS (JULY 7, 2008)



Source: www.terraserver.homeadvisor.msn.com, 1995 Aerial Photograph

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0 155 310 FEET
APPROXIMATE SCALE

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RUNNELS COUNTY, TEXAS

FIGURE 5D: WATER/GROUNDWATER ELEVATIONS (AUGUST 4, 2008)

A

A'

WOLVERTON WELL NO. 1 (1667.3)

MW-12 (1664.4)

MW-5 (1666.4)

MW-6 (1659.3)

MW-2 (1621.6)

MW-1 (1621.4)

MW-7 (1609.0)

1665

1655

1645

1635

1625

1615

1605

1595

1585

1575

SAND/ SILTY SAND

SILTY CLAY

LIMESTONE, YELLOWISH-GRAY

APPROXIMATE DEPTH TO SALT WATER REPORTED BY RRC DURING 1998 P&A ACTIVITIES

1639

1624.7

INSUFFICIENT WATER FOR SAMPLING

LIMESTONE WITH THIN SHALE SEAMS, MEDIUM BLUISH-GRAY

DRY

1613.36

18,400

1604.54

3,020

4,330

ALLUVIAL DEPOSITS

1611.02

LIMESTONE, YELLOWISH-GRAY

SILTY SAND

SILTY CLAYEY SAND

SAND

LIMESTONE WITH THIN SHALE SEAMS, MEDIUM BLUISH-GRAY

1587.19

6,140

COLORADO RIVER

1585.6

787

BOTTOM OF RIVER (APPROXIMATE)

TOTAL DEPTH =3,500 FEET

Date: 08/13/08 N:\Projects\2005\94057272C\94057272C-AA.dwg Layout: Model

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Terracon Project No.: 94057272C

LEGEND :

(1666.4) GROUND SURFACE ELEVATION IN FEET

GROUNDWATER ELEVATION IN FEET (JULY 7, 2008)

4,330 CHLORIDE CONCENTRATION IN MILLIGRAMS PER LITER (EPA METHOD 300.0) (JULY 2008)

0 6 12 FEET
VERTICAL SCALE

0 60 120 FEET
HORIZONTAL SCALE

BALLINGER SEEP
RUNNELS COUNTY, TEXAS

FIGURE 6: CROSS SECTION A-A'

B

B'

WOLVERTON WELL NO. 1 (1667.3)

MW-12 (1664.4)

MW-5 (1666.4)

MW-6 (1659.3)

MW-2 (1621.6)

MW-1 (1621.4)

MW-4 (1621.1)

MW-9 (1610.6)

1665

1655

1645

1635

1625

1615

1605

1595

1585

1575

SAND/ SILTY SAND

SILTY CLAY

LIMESTONE, YELLOWISH-GRAY

APPROXIMATE DEPTH TO SALT WATER REPORTED BY RRC DURING 1998 P&A ACTIVITIES

1639

1624.7

INSUFFICIENT WATER FOR SAMPLING

LIMESTONE WITH THIN SHALE SEAMS, MEDIUM BLUISH-GRAY

DRY

1613.36

18, 400

TOTAL DEPTH =3,500 FEET

1611.02

12,140

1608.3

1608.1

2,240

1604.54

3,020

4,330

1610.10

4,680

SEEP ELEVATION ALONG BANK OF TRIBUTARY

ALLUVIAL DEPOSITS

SILTY SAND

LIMESTONE, YELLOWISH GRAY

WATER ELEVATION IN TRIBUTARY

SANDY CLAYEY SILT

LIMESTONE WITH THIN SHALE SEAMS, MEDIUM BLUISH-GRAY

1586.8

6,540

COLORADO RIVER

1585.6

793

BOTTOM OF RIVER (APPROXIMATE)

STATE OF TEXAS
MICHAEL COVERT
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Date: 08/14/08 N:\Projects\2005\94057272c\94057272C-BB.dwg Layout: Model

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Terracon Project No.: 94057272C

LEGEND :

(1666.4) GROUND SURFACE ELEVATION IN FEET

GROUNDWATER ELEVATION IN FEET (JULY 7, 2008)

4,330 CHLORIDE CONCENTRATION IN MILLIGRAMS PER LITER (EPA METHOD 300.0) (JULY 2008)

0 6 12 FEET
VERTICAL SCALE

0 60 120 FEET
HORIZONTAL SCALE

BALLINGER SEEP
RUNNELS COUNTY, TEXAS

FIGURE 7: CROSS SECTION B-B'

C

C'

MW-12
(1664.4)

MW-6
(1659.3)

SAND/
SILTY
SAND

SEEP ELEVATION 50 FEET
UPSTREAM OF MW-3. IT
APPEARS THAT THE SEEP
SURFACES IN THE TRIBUTARY
AT THIS ELEVATION

LIMESTONE,
YELLOWISH-GRAY

MW-3
(1636.6)

1639.9

SILTY CLAY

SILTY CLAY

1631.33

18,200

1624.7

INSUFFICIENT
WATER FOR
SAMPLING

DRY

LIMESTONE,
YELLOWISH-GRAY

LIMESTONE WITH
THIN SHALE
SEAMS, MEDIUM
BLUISH-GRAY

MW-2 (1621.6)

MW-1 (1621.4)

MW-4
(1621.1)

SEEP ELEVATION
ALONG BANK OF
TRIBUTARY

ALLUVIAL
DEPOSITS

MW-9
(1610.6)

1611.02

2,140

1608.3

1608.1

2,240

1610.10

SILTY
SAND

LIMESTONE,
YELLOWISH
GRAY

1604.54

3,020

4,680

SANDY
CLAYEY
SILT

WATER ELEVATION
IN TRIBUTARY

4,330

LIMESTONE WITH THIN SHALE
SEAMS, MEDIUM BLUISH-GRAY

1586.8

6,540

COLORADO RIVER

1585.6

793

BOTTOM OF RIVER
(APPROXIMATE)

1665
1655
1645
1635
1625
1615
1605
1595
1585
1575

STATE OF TEXAS
MICHAEL COVERT
GEOLOGY
LIC.# 1636
LICENSED
PROFESSIONAL GEOSCIENTIST

Date: 08/14/08 N:\Projects\2005\94057272C\94057272C-CC.dwg Layout: Model

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Terracon Project No.: 94057272C

LEGEND :

(1664.4) GROUND SURFACE ELEVATION IN FEET

▼ GROUNDWATER ELEVATION IN FEET (JULY 7, 2008)

4,330 CHLORIDE CONCENTRATION IN MILLIGRAMS PER LITER (EPA METHOD 300.0) (JULY 2008)

0 6 12 FEET
VERTICAL SCALE

0 60 120 FEET
HORIZONTAL SCALE

BALLINGER SEEP
RUNNELS COUNTY, TEXAS

FIGURE 8: CROSS SECTION C-C'

D

D'

WOLVERTON WELL NO. 1 (1667.3)

MW-12 (1664.4)

MW-5 (1666.4)

MW-6 (1659.3)

MW-3 (1636.6)

MW-2 (1621.6)

MW-1 (1621.4)

MW-4 (1621.1)

MW-9 (1610.6)

1665

1655

1645

1635

1625

1615

1605

1595

1585

1575

SAND/ SILTY SAND

APPROXIMATE DEPTH TO SALT WATER REPORTED BY RRC DURING 1998 P&A ACTIVITIES

1639

SEEP ELEVATION 50 FEET UPSTREAM OF MW-3. IT APPEARS THAT THE SEEP SURFACES IN THE TRIBUTARY AT THIS ELEVATION

LIMESTONE, YELLOWISH-GRAY

1639.9

SILTY CLAY

SILTY CLAY

1631.33

18,200

LIMESTONE, YELLOWISH-GRAY

DRY

1624.7

INSUFFICIENT WATER FOR SAMPLING

LIMESTONE WITH THIN SHALE SEAMS, MEDIUM BLUISH-GRAY

1613.36

18,400

1604.54

4,330

1611.02

2,140

1608.3

1608.1

2,240

3,020

SEEP ELEVATION ALONG BANK OF TRIBUTARY

ALLUVIAL DEPOSITS

1610.10

4,680

WATER ELEVATION IN TRIBUTARY

LIMESTONE, YELLOWISH GRAY

SILTY SAND

SANDY CLAYEY SILT

LIMESTONE WITH THIN SHALE SEAMS, MEDIUM BLUISH-GRAY

1586.8

6,540

COLORADO RIVER

1585.6

793

BOTTOM OF RIVER (APPROXIMATE)

TOTAL DEPTH =3,500 FEET

STATE OF TEXAS
MICHAEL COVERT
GEOLOGY
LIC.# 1636
LICENSED
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Date: 08/14/08 N:\Projects\2005\94057272C\94057272C-DD.dwg Layout: Model

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Terracon Project No.: 94057272C

LEGEND :

(1666.4) GROUND SURFACE ELEVATION IN FEET

GROUNDWATER ELEVATION IN FEET (JULY 7, 2008)

6,750 CHLORIDE CONCENTRATION IN MILLIGRAMS PER LITER (EPA METHOD 300.0) (JULY 2008)

0 6 12 FEET
VERTICAL SCALE

0 60 120 FEET
HORIZONTAL SCALE

BALLINGER SEEP
RUNNELS COUNTY, TEXAS

FIGURE 9: CROSS SECTION D-D'

E

E'

MW-9 (1610.6)

MW-7 (1609.0)

MW-8 (1607.0)

MW-14 (1605.8)

MW-17 (1606.2)

MW-16 (1601.6)

1610

1605

1600

1595

1590

1585

1580

1575

1570

1575

SILTY SAND

TRIBUTARY

SILTY SAND

LIMESTONE, YELLOWISH-GRAY

SAND

SILTY CLAYEY SAND

SILTY SAND

SANDY CLAYEY SILT

SAND

SAND

1586.9

1586.8

1585.6

1587.19

1587.1

LIMESTONE, YELLOWISH-GRAY

SILTY CLAYEY SAND

SAND

GRAVELLY SAND

1585.5

1585.8

LIMESTONE, YELLOWISH GRAY

ELEVATION OF COLORADO RIVER AT TRIBUTARY

8,630

6,540

6,140

1,930

NOT SAMPLED

NOT SAMPLED

LIMESTONE WITH THIN SHALE SEAMS, MEDIUM BLUISH-GRAY

LIMESTONE WITH THIN SHALE SEAMS, MEDIUM BLUISH-GRAY

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Date: 08/13/08 N:\Projects\2005\94057272C\94057272C-EE.dwg Layout: Model

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Terracon Project No.: 94057272C

LEGEND :

(1609.0) GROUND SURFACE ELEVATION IN FEET

▼ GROUNDWATER ELEVATION IN FEET (JULY 7, 2008)

6,540 CHLORIDE CONCENTRATION IN MILLIGRAMS PER LITER (EPA METHOD 300.0) (JULY 2008)

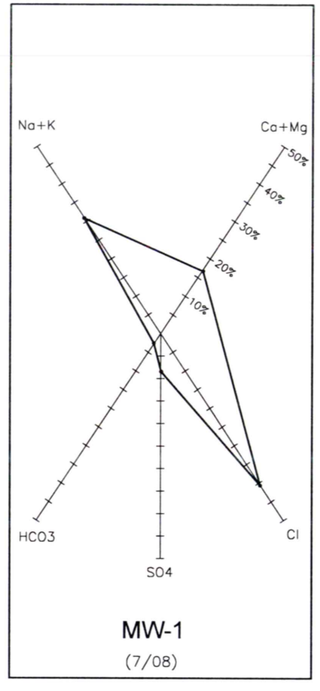
0 3 6 FEET
VERTICAL SCALE

0 120 240 FEET
HORIZONTAL SCALE

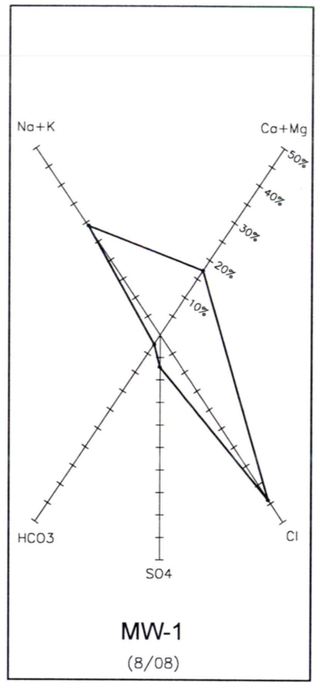
BALLINGER SEEP
RUNNELS COUNTY, TEXAS

FIGURE 10: CROSS SECTION E-E'

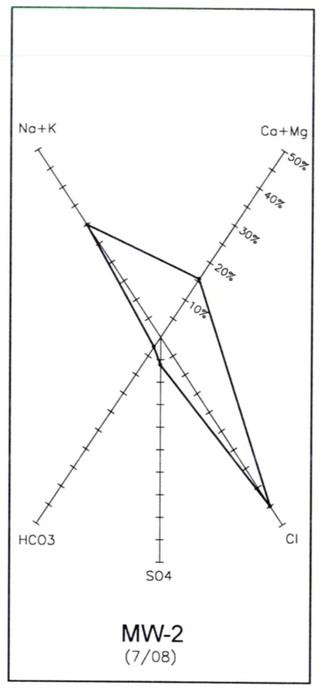
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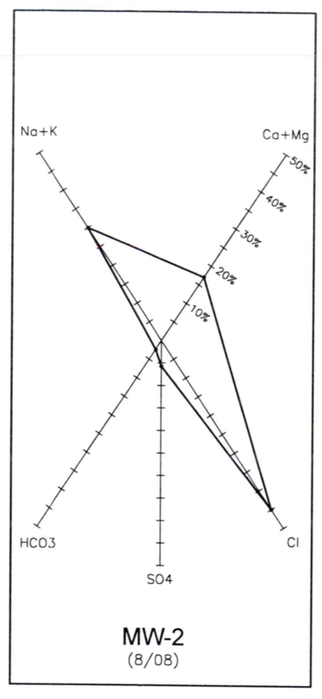
MW-1
(7/08)



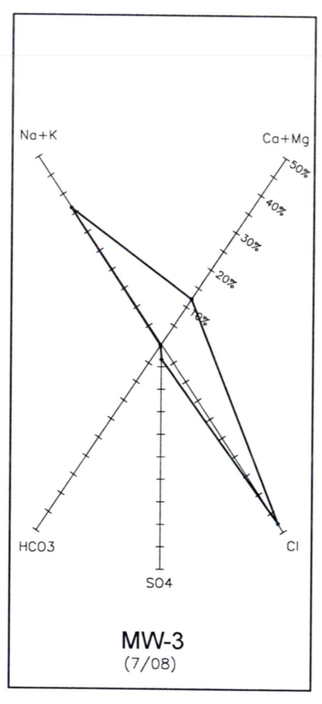
MW-1
(8/08)



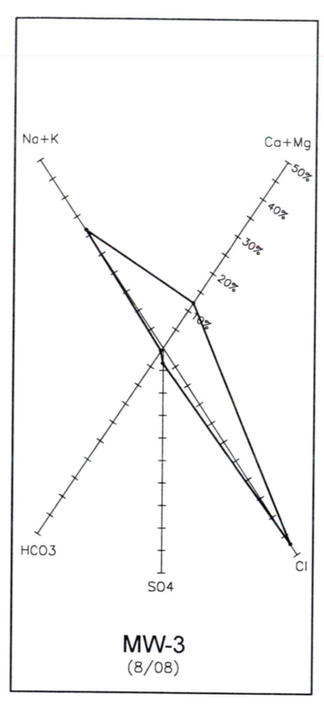
MW-2
(7/08)



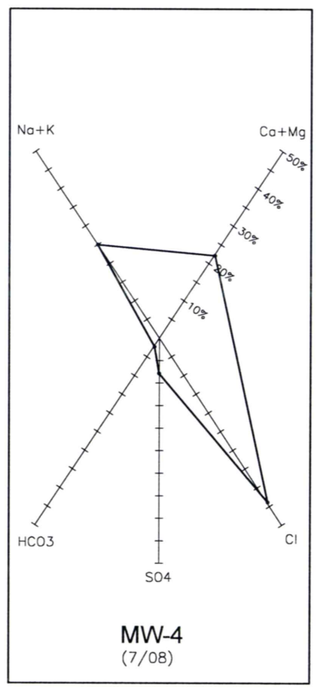
MW-2
(8/08)



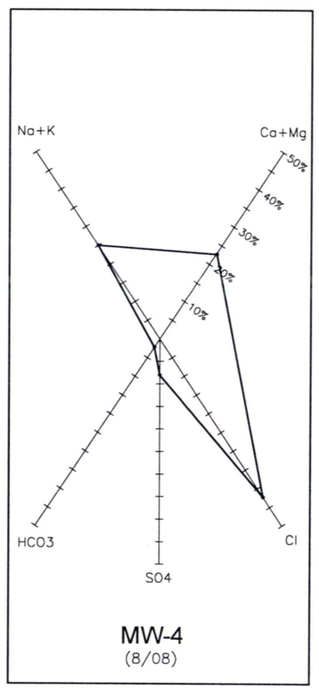
MW-3
(7/08)



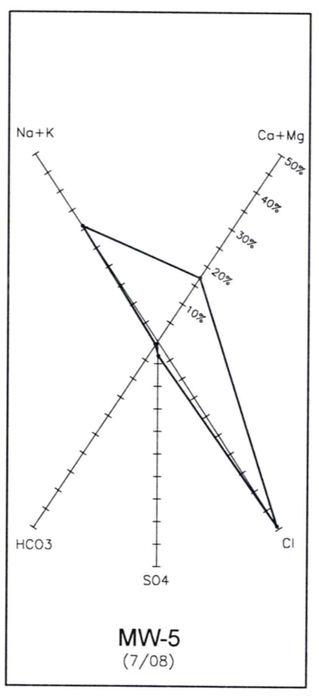
MW-3
(8/08)



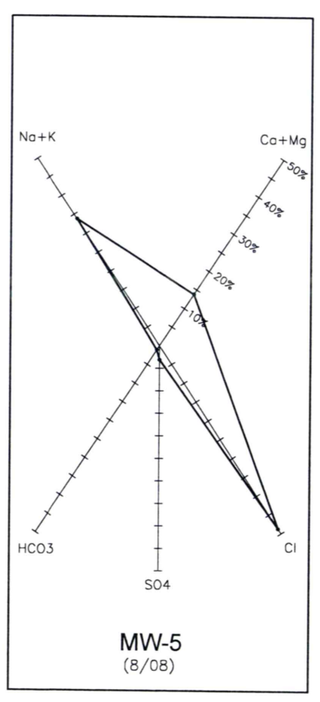
MW-4
(7/08)



MW-4
(8/08)



MW-5
(7/08)



MW-5
(8/08)

——— RADIAL PLOT BASED ON EPA METHOD 300.0 CHLORIDE DATA

STATE OF TEXAS
MICHAEL COVERT
GEOLOGY
LIC.# 1636
LICENSED
PROFESSIONAL GEOSCIENTIST

FIGURE 11A:

RADIAL PLOTS OF ANION/CATION DATA

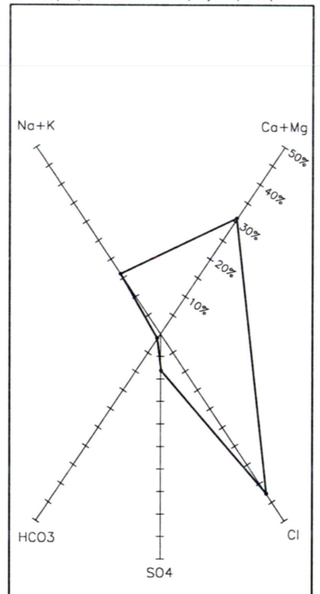
(JULY-AUGUST 2008)

BALLINGER SEEP

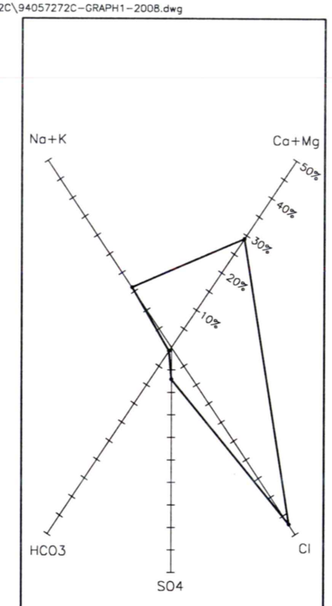
RUNNELS COUNTY, TEXAS

Terracon Project No: 94057272C

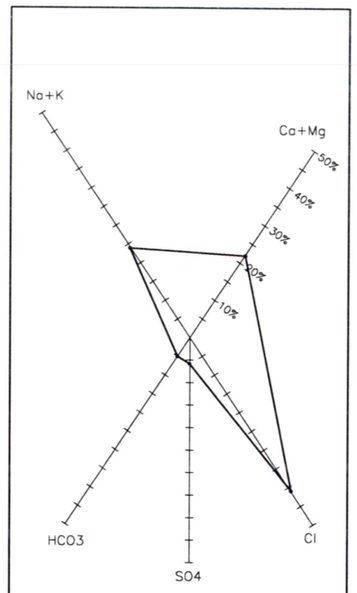
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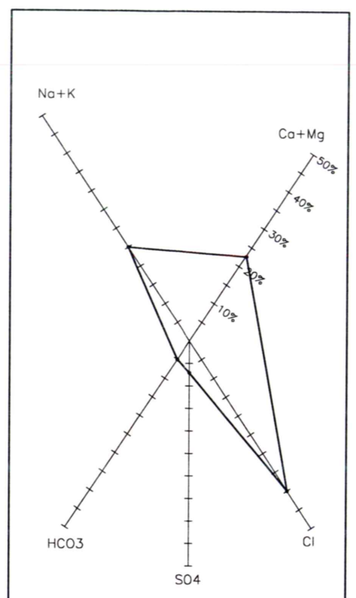
MW-7
(7/08)



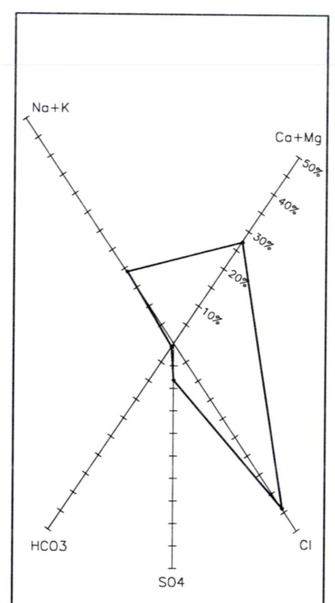
MW-7
(8/08)



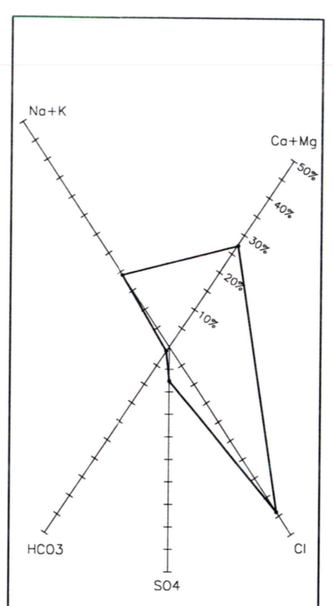
MW-8
(7/08)



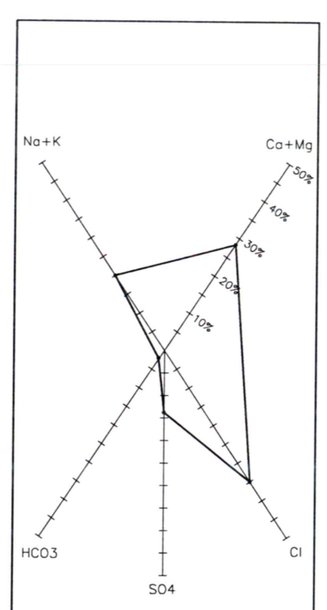
MW-8
(8/08)



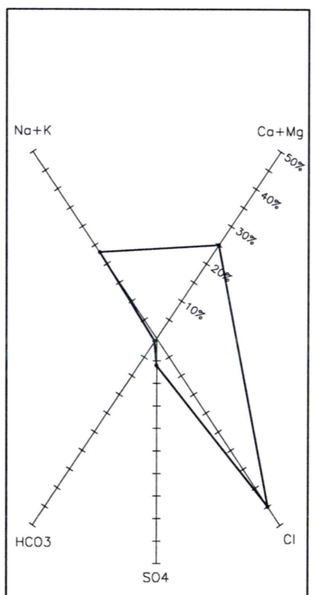
MW-9
(7/08)



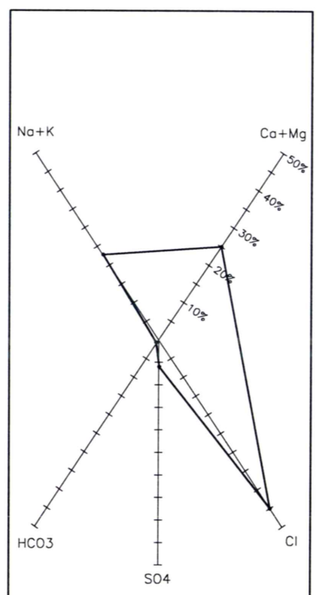
MW-9
(8/08)



MW-13
(8/08)



MW-16
(7/08)



MW-16
(8/08)

RADIAL PLOT BASED ON EPA METHOD 300.0 CHLORIDE DATA

STATE OF TEXAS
MICHAEL COVERT
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LIC.# 1636
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FIGURE 11B:

RADIAL PLOTS OF ANION/CATION DATA

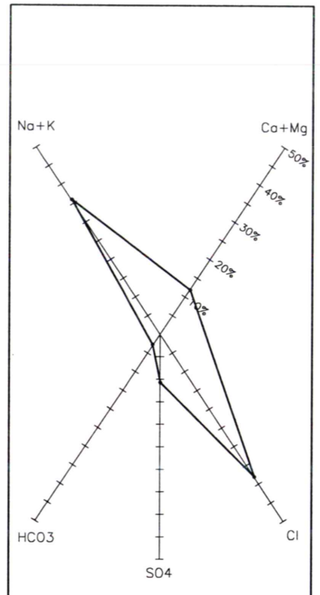
(JULY-AUGUST 2008)

BALLINGER SEEP

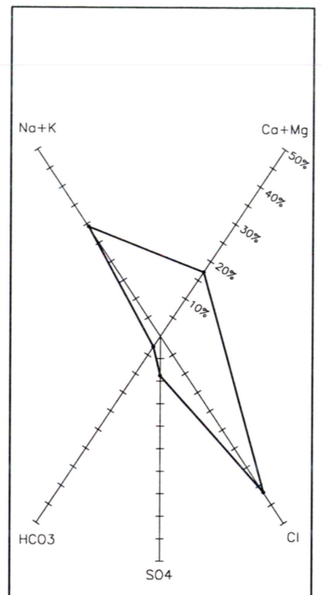
RUNNELS COUNTY, TEXAS

Terracon Project No: 94057272C

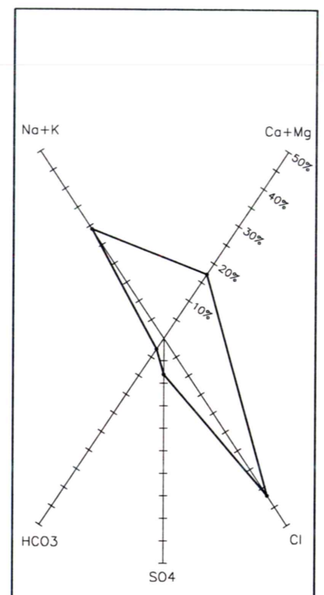
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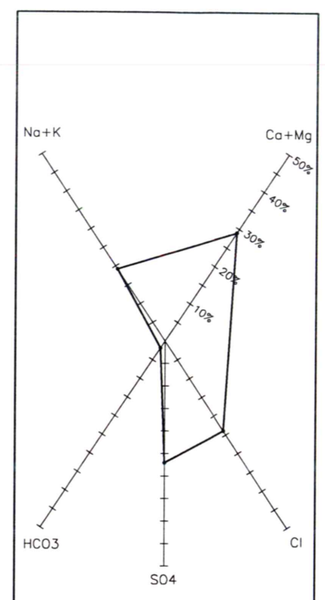
LOWER SEEP
(7/08)



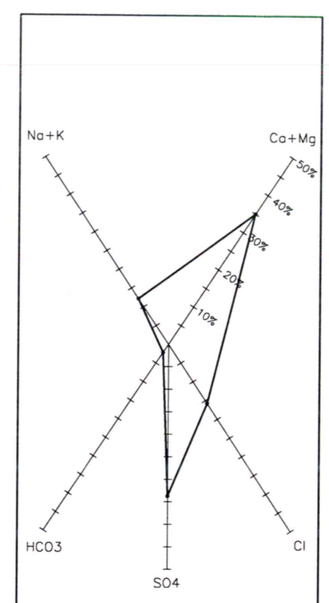
SW-TRIB-1
(7/08)



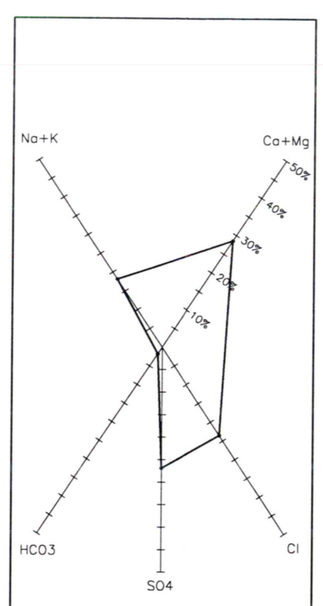
SW-TRIB-1
(8/08)



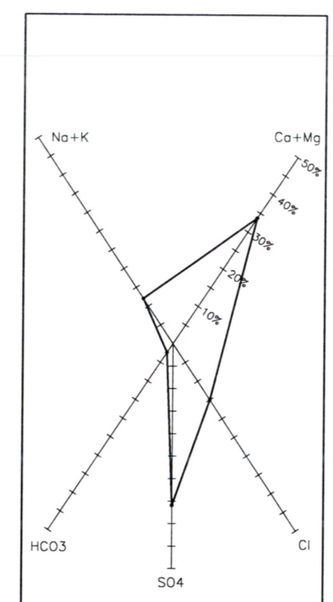
SW-CR-50' UP
(7/08)



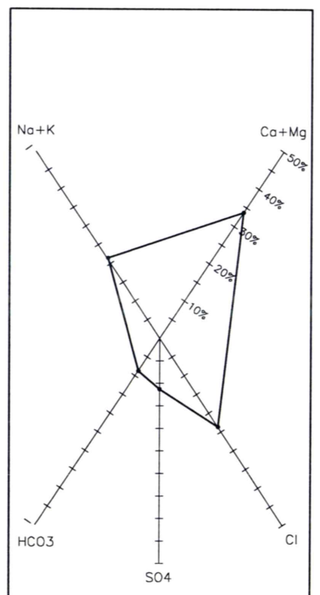
SW-CR-50' UP
(8/08)



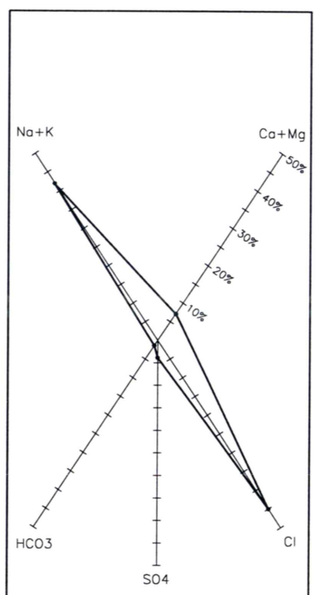
SW-CR-50' DOWN
(7/08)



SW-CR-50' DOWN
(8/08)



WATER WELL
(AVERAGE)



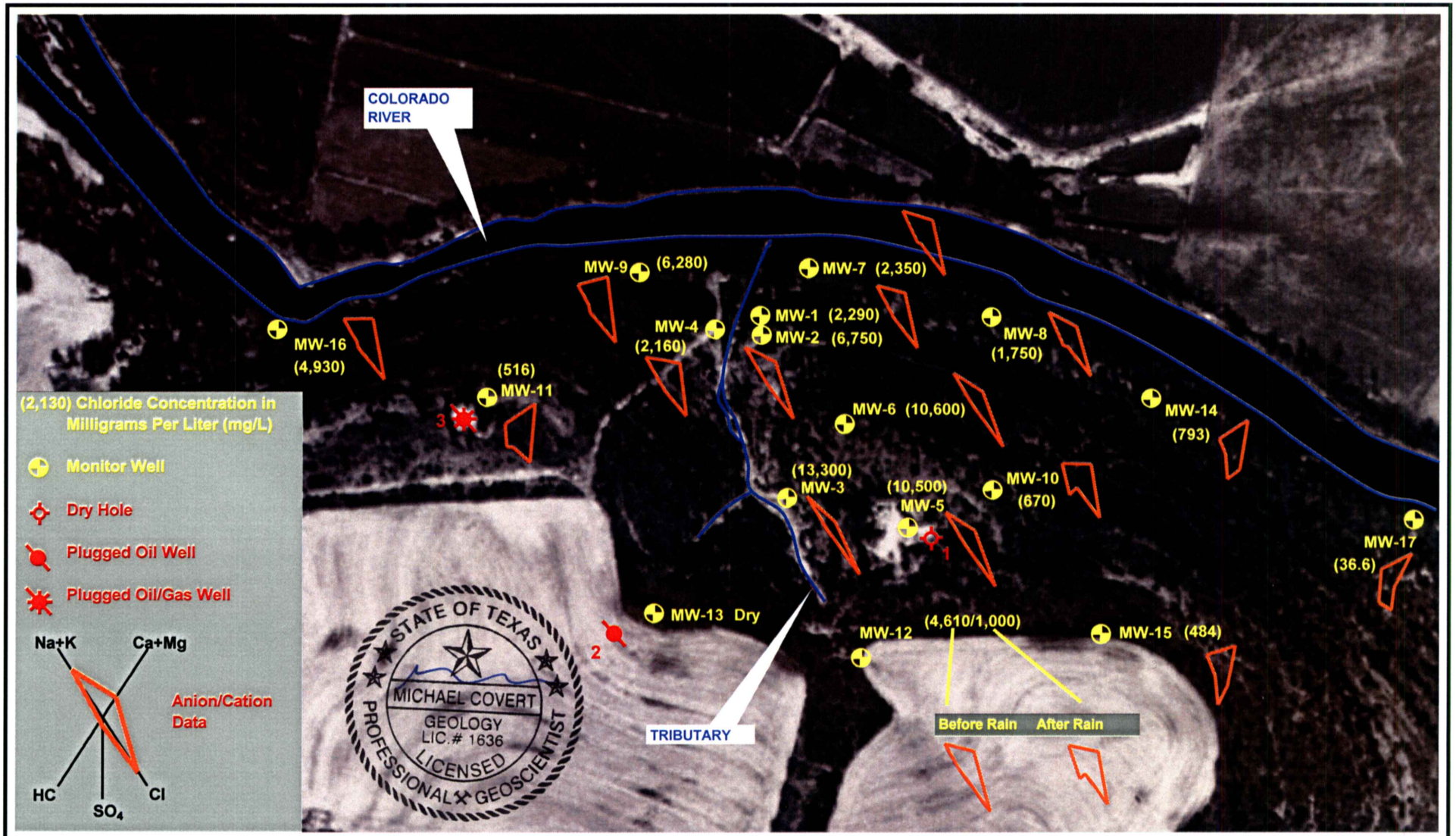
COLEMAN JUNCTION

RADIAL PLOT BASED ON EPA METHOD 300.0 CHLORIDE DATA

STATE OF TEXAS
MICHAEL COVERT
GEOLOGY
LIC.# 1636
LICENSED
PROFESSIONAL GEOSCIENTIST

FIGURE 11C:
RADIAL PLOTS OF ANION/CATION DATA
(JULY-AUGUST 2008)
BALLINGER SEEP
RUNNELS COUNTY, TEXAS

Terracon Project No: 94057272C



Source: www.terraserver.homeadvisor.msn.com, 1995 Aerial Photograph

THIS DRAWING SHOULD NOT BE USED SEPARATELY FROM ORIGINAL REPORT.

0 155 310 FEET
APPROXIMATE SCALE

Terracon Project No. 94057272C

BALLINGER SEEP
RUNNELS COUNTY, TEXAS

FIGURE 12: ANION/CATION DATA FOR GROUNDWATER (MAY 2007)

Terracon

APPENDIX B

Boring Logs

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-1
TOTAL DEPTH: 25.0'
SURFACE ELEVATION: 1621.4
FIELD PERSONNEL: M. Majesko

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 6 7/8"
SCREEN: Diam. 2" Length 20' Slot Size 0.010"
CASING: Diam. 2" Length 5' Type PVC
DATE DRILLED: 7-17-06

DEPTH (FT)	CHLORIDE	PID	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0						
	<1200	12.7				LIMESTONE, yellowish-gray, hard, dry, no odor
5						
	<1200	7.7				- some moisture noted on rock core from 9'-9.5'
10				11.0		SANDY SILTY CLAY, brown, medium stiff, slightly plastic, damp, no odor (1"-2" seam)
	<1200	11.5		12.0	12.0	
						LIMESTONE, medium bluish gray, hard, dry, no odor - 1.5 feet of sample recovery
15					15.0	
	<1200	4.9				LIMESTONE, medium bluish gray, hard, dry, no odor
20						
	<1200	1.8				
25		0.0			25.0	
						Bottom of boring at 25.0'
30						

REMARKS:
Core sampling from 0-25'.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

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MWL-CHLORIDE 94057272.GPJ 11/10/06

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-2
TOTAL DEPTH: 50.0'
SURFACE ELEVATION: 1621.6
FIELD PERSONNEL: M. Majesko

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 6 7/8"
SCREEN: Diam. 2" Length 25' Slot Size 0.010"
CASING: Diam. 2" Length 25' Type PVC
DATE DRILLED: 7-17-06

DEPTH (FT)	CHLORIDE	PID	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0						
					12.0	LIMESTONE, yellowish gray, hard, dry, no odor
10						
	<1200	3.8		15.0		LIMESTONE, medium bluish gray, hard, dry, no odor
	<1200	2.7		16.0		- wet fracture approximately 15'-16'
20						
	<1200	3.1			25.0	
	<1200	1.2				LIMESTONE and SHALE, medium bluish gray, hard, dry, no odor
30						
	<1200	2.3				
	<1200	1.9				
40						
	<1200	6.0				
	<1200	2.2			50.0	
50						
						Bottom of boring at 50.0'
60						

REMARKS:
Core sampling from 10'-15'.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272.GPJ 11/10/06

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-3
TOTAL DEPTH: 15.0'
SURFACE ELEVATION: 1636.6
FIELD PERSONNEL: M. Majesko

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 6 7/8"
SCREEN: Diam. 2" Length 12.5' Slot Size 0.010"
CASING: Diam. 2" Length 2.5' Type PVC
DATE DRILLED: 7-18-06

DEPTH (FT)	SOIL SYMBOL	WELL CONSTRUCTION	CHLORIDE	PID	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0				2.4				SILTY CLAY, dark yellowish orange, yellowish gray and light gray, soft, plastic, moist, no odor
				3.2		4.0	4.0	
5			1216	5.7		5.0		LIMESTONE, medium bluish gray, hard, dry, no odor
			3212	7.9				- moist weathered zone at 6.5' (<1")
10			120	14.2				
15							15.0	
								Bottom of boring at 15.0'
20								
25								
30								

REMARKS:
Hand auger 0-4', core sampling 4'-15'

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272.GPJ 11/10/06

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-4
TOTAL DEPTH: 25.0'
SURFACE ELEVATION: 1621.1
FIELD PERSONNEL: M. Majesko

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 6 7/8"
SCREEN: Diam. 2" Length 20' Slot Size 0.010"
CASING: Diam. 2" Length 5' Type PVC
DATE DRILLED: 7-18-06

DEPTH (FT)	SOIL SYMBOL	WELL CONSTRUCTION	CHLORIDE	PID	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0								
			<120	1.9				LIMESTONE, yellowish gray, hard, dry, no odor
5								
			<120	3.9				
10							12.0	
			<120	5.5				LIMESTONE, medium bluish gray, hard, dry, no odor
15								
			172	5.0				
20								
			<120	3.3				
25							25.0	
								Bottom of boring at 25.0'
30								

DEPTH (FT): 0, 5, 10, 15, 20, 25, 30

REMARKS:

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272.GPJ 11/10/06

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-5
TOTAL DEPTH: 55.0'
SURFACE ELEVATION: 1666.4
FIELD PERSONNEL: M. Majesko

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 6 7/8"
SCREEN: Diam. 2" Length 50' Slot Size 0.010"
CASING: Diam. 2" Length 5' Type PVC
DATE DRILLED: 7-18-06

DEPTH (FT)	CHLORIDE	PID	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0					3.0	SILTY CLAY, yellowish gray, medium stiff, slightly plastic, damp, no odor
	1628	3.1		4.0		LIMESTONE, yellowish gray, hard, dry, no odor
	1628	1.1		5.0		- dark yellowish orange clay seam (~2" thick) present at 4', 6', 11', 17', and 24', stiff, damp, non-plastic except at 6' which was slightly plastic
	708	0.0				
10				11.0		
	1216	0.0		12.0		
	1180	1.0				
20					24.0	
	888	2.5				LIMESTONE, medium bluish gray, hard, dry, no odor
30						- shale seam (3" thick) at 26'
	268	0.0				- shale seam (3" thick) at 31'
	<120	0.0				- shale seam (2" thick) at 36'
40						
						- shale seam (2" thick) at 47'
50						
	<120	0.0			55.0	- shale seam (2" thick) at 54'
60						Bottom of boring at 55.0'

REMARKS:
Core sampling from 0-55'

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272.GPJ 11/10/06

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-6
TOTAL DEPTH: 40.0'
SURFACE ELEVATION: 1659.3
FIELD PERSONNEL: M. Majesko

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 6 7/8"
SCREEN: Diam. 2" Length 35' Slot Size 0.010"
CASING: Diam. 2" Length 5' Type PVC
DATE DRILLED: 7-19-06

DEPTH (FT)	CHLORIDE	PID	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0						
	<120	0.0				LIMESTONE, yellowish gray, hard, dry, no odor
	<120	1.6				
10						
	340	3.9				
	<120	2.6				
20						
	144	1.0			25.0	
	144	2.1				LIMESTONE, medium bluish gray, hard, dry, no odor - shale seams present in 25'-30' and 35'-40' intervals
30						
	<120	1.2				
	<120	1.8			40.0	
40						Bottom of boring at 40.0'
50						
60						

REMARKS:

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272.GPJ 11/10/06

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-7
TOTAL DEPTH: 30.0'
SURFACE ELEVATION: 1609.0
FIELD PERSONNEL: M. Majesko

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary/HSA
BORE HOLE DIAMETER: 6 7/8"
SCREEN: Diam. 2" Length 25' Slot Size 0.010"
CASING: Diam. 2" Length 5' Type PVC
DATE DRILLED: 7-20-06

DEPTH (FT)	SOIL SYMBOL	WELL CONSTRUCTION	CHLORIDE	PID	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM	DEPTH (FT)
0									0
				7.5				SILTY SAND, red, very fine-grained, well sorted, damp, no odor	
				9.6					
				8.6					
				7.8					
5			<120	9.1					5
				7.6					
				7.7					
			<120	8.4				- silty sandy clay seam, soft, damp from 7'-7.5'	
				8.7					
10				8.8			10.0		10
				8.2				SILTY CLAYEY SAND, red, very fine-grained, moist, no odor	
				7.1					
				6.3					
			652	5.8			14.0	- silty sandy clay seam (1"-2"), moist from 13'-13.5'	
15				7.9				SAND, yellowish red, very fine-grained, well sorted, moist, with a few thin clay seams (<1/4")	15
				7.9					
				6.9					
			<120	7.1					
				8.4				- silty sand clay seam (3") at 18'	
20				8.3		20.0	20.0		20
			172	8.7		21.0	21.0	SILTY CLAYEY SAND, red, very fine-grained, very moist, no odor	
								LIMESTONE, medium bluish gray, hard, dry, no odor	
25									25
								- 2"-3" shale seams present at 26', 28' and 29'	
			<120	3.5					
30							30.0	Bottom of boring at 30.0'	30

REMARKS:
Core sampling from 20'-30'

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272.GPJ 11/10/06

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW- 8
TOTAL DEPTH: 30.0'
SURFACE ELEVATION:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 8.25"
SCREEN: Diam. 2" Length 15' Slot Size 0.010"
CASING: Diam. 2" Length 15' Type PVC
DATE DRILLED: 04-24-07

DEPTH (FT)	PID	CHLORIDE	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0				
	0			SILTY SAND, with sand seams, very fine-grained, moderate reddish orange, very slightly moist, no odor
	0			
	0			
	0			
5	0	504		
	0			
	0			
	0			
	0			
10	0	<120		
	0			
	0			
	--			- no recovery 12'-15' due to high sand content
	--			
15	--			
	0	<120		
	0	<120		- moderate brown silty clay seam 16.2'-16.5'
	0			- very moist and increasingly sandy 16.5'-19'
	0	268	19.0	- fragment of 1" sub-rounded gravel at 17.5'
20 ▽	0	600	20.0	- 1/2" moderate brown sandy clay seams from 17'-19'
				SAND, fine-grained, grayish orange, well sorted, very moist to wet, no odor
				LIMESTONE with occasional shale seams, medium bluish gray, hard, dry to slightly moist, no odor
25				
30	0	180	30.0	
				Bottom of boring at 30.0'
35				
40				

REMARKS:
No sampling from 20'-29'. Sample from 29'-30' interval collected off augers.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272B.GPJ 05/11/07

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW- 9
TOTAL DEPTH: 35.0'
SURFACE ELEVATION:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 8.25"
SCREEN: Diam. 2" Length 20' Slot Size 0.010"
CASING: Diam. 2" Length 12' Type PVC
DATE DRILLED: 04-24-07

DEPTH (FT)	PID	CHLORIDE	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0				
	1.2			SILTY SAND with sand seams, very fine-grained, moderate reddish orange, slightly moist, no odor
	1.7			
	2.4	<128		
	1.2			
5	1.6			
	2.3			- moist seam from 5'-7'
	2.7	<128	7.0	
	--			LIMESTONE, yellowish gray, hard, dry, no odor
	--			
10	--			
	--		11.0	
	0			SANDY CLAYEY SILT, greenish gray, dry with slightly moist seams, no odor
	0.6	496		
	1.3			- slightly moist 12'-13'
15	1.6			
	2.0			- 1/2" shaley clay seams from 15'-16'
	1.6			
	1.0			
	1.8			
20	0.6			
	2.4	704		- 2 1/2" limestone fragment at 19.5'
	2.4			- very moist with hard platy shale seams and oxidized partings from 20'-21'
	1.9	544	23.0	
	--			LIMESTONE, yellowish gray, hard, dry, no odor
25	--		25.0	
	--			LIMESTONE with occasional shale seams, medium bluish gray, hard, dry to slightly moist, no odor
	--			
	--			
	--			
30	--	<128		
	--			
	--			
	--			
	--			
35	0	<128	35.0	
				Bottom of boring at 35.0'
40				

REMARKS:
No sampling from 23'-34'. Boring caved from 32'-35'. Collected sample at 34'-35' from bottom of augers.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

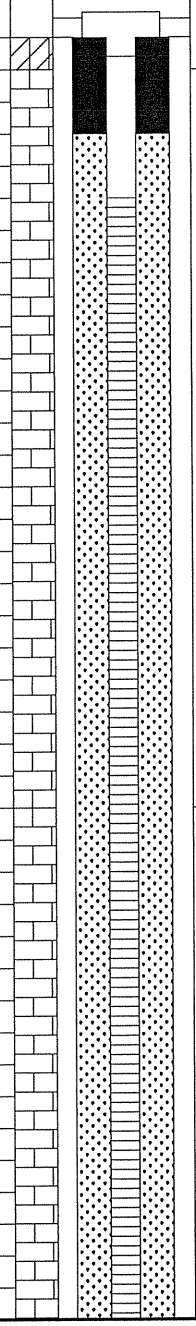
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MWL-CHLORIDE 94057272B.GPJ 05/11/07

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-10
TOTAL DEPTH: 60.0'
SURFACE ELEVATION:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. 2" Length 55' Slot Size 0.010"
CASING: Diam. 2" Length 5' Type PVC
DATE DRILLED: 04-24-07



DEPTH (FT)	PID	CHLORIDE	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0					1.0	SANDY SILTY CLAY, yellowish gray, slightly moist, no odor
						LIMESTONE, yellowish gray, hard, dry, no odor
5	2.0	<128				- moist, grayish yellow, weathered seam from 4'-7'
10	1.8	<128				- slightly moist, weathered seam from 10'-11'
15	0	374				
20	0	1720				
					24.0	- slightly moist, weathered seam at interface
25	0	236				LIMESTONE with shale seams, medium bluish gray, hard, dry, no odor - shale seams are slightly moist - shale content decreasing with depth
30	0	264				
35	0					
40	0	<128				

REMARKS:
Intervals and descriptions are estimated due to drilling method with no core sampling. Chloride and PID samples collected at 5' intervals from cuttings.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272B.GPJ 05/11/07

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-10
TOTAL DEPTH: 60.0'
SURFACE ELEVATION:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. 2" Length 55' Slot Size 0.010"
CASING: Diam. 2" Length 5' Type PVC
DATE DRILLED: 04-24-07

DEPTH (FT)	SOIL SYMBOL	WELL CONSTRUCTION	PID	CHLORIDE	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM	DEPTH (FT)
40								LIMESTONE with shale seams, medium bluish gray, hard, dry, no odor - shale seams are slightly moist - shale content decreasing with depth	40
45			0						45
50			0	152					50
55			0						55
60			0	704			60.0		60
								Bottom of boring at 60.0'	
65									65
70									70
75									75
80									80

REMARKS:
Intervals and descriptions are estimated due to drilling method with no core sampling. Chloride and PID samples collected at 5' intervals from cuttings.

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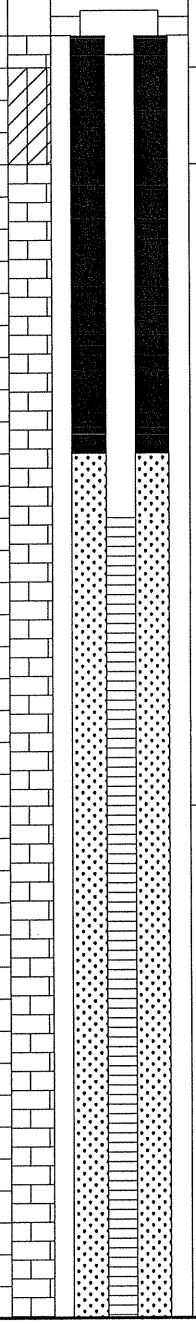
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MWL-CHLORIDE 94057272B.GPJ 05/11/07

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-11
TOTAL DEPTH: 70.0'
SURFACE ELEVATION:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. 2" Length 55' Slot Size 0.010"
CASING: Diam. 2" Length 15' Type PVC
DATE DRILLED: 04-25-07



DEPTH (FT)	PID	CHLORIDE	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0					1.0	LIMESTONE, yellowish gray, hard, dry, no odor
					4.0	SANDY SILTY CLAY, moderate yellowish brown grading to pale yellowish brown, slightly moist, no odor
5	0	<128				LIMESTONE, yellowish gray, hard, dry, no odor - moist, weathered, grayish yellow seam from 4'-6' - slightly moist seams from 6'-10'
10	0					
15	0	<128				- slightly moist seams 15'-20'
20	0	<128				
					24.0	- slightly moist, weathered seam at interface
25	0					LIMESTONE with shale seams, medium bluish gray, hard, dry, no odor - shale seams are slightly moist - high shale content 24'-35' and then decreasing with depth to 55'
30	1.5	<128				
35	0					
40	0	<128				

REMARKS:
Intervals and descriptions are estimated due to drilling method with no core sampling. Chloride and PID samples collected at 5' intervals from cuttings.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272B.GPJ 05/11/07

a

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-11
TOTAL DEPTH: 70.0'
SURFACE ELEVATION:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. 2" Length 55' Slot Size 0.010"
CASING: Diam. 2" Length 15' Type PVC
DATE DRILLED: 04-25-07

DEPTH (FT)	SOIL SYMBOL	WELL CONSTRUCTION	PID	CHLORIDE	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM	DEPTH (FT)
40								LIMESTONE with shale seams, medium bluish gray, hard, dry, no odor - shale seams are slightly moist - high shale content 24'-35' and then decreasing with depth to 55'	40
45			0						45
50			0	<128					50
55			0					- high shale content and slightly moist 55'-60'	55
60			2.2	<128				- moderate shale content and very slightly moist 60'-70'	60
65			1.6						65
70			0	<128			70.0		70
								Bottom of boring at 70.0'	
75									75
80									80

REMARKS:
Intervals and descriptions are estimated due to drilling method with no core sampling. Chloride and PID samples collected at 5' intervals from cuttings.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MW-CHLORIDE 94057272B.GPJ 05/11/07

b

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-12
TOTAL DEPTH: 40.0'
TOP OF CASING:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. 2" Length 35' Slot Size 0.010"
CASING: Diam. 2" Length 5' Type PVC
DATE DRILLED: 4-23-07

DEPTH (FT)	SOIL SYMBOL	WELL CONSTRUCTION	PID	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM	DEPTH (FT)
0						2.0	SAND grading to SILTY SAND, very fine-grained, dark yellowish orange, slightly moist, no odor	0
5			<128				LIMESTONE, yellowish gray, hard, dry, no odor	5
10			236					10
15			592				- moist weathered seams 15'-23'	15
20			824			23.0		20
25			496				LIMESTONE with shale seams, medium bluish gray, hard, dry, no odor - moist seams 23'-35'	25
30			<128					30
35			1492					35
40			<128			40.0	Bottom of boring at 40.0'	40

REMARKS:
Intervals and descriptions are estimated due to drilling method with no core sampling. Chloride and PID samples collected at 5' intervals from cuttings.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL40 94057272B.GPJ 9/12/08

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-13
TOTAL DEPTH: 70.0'
TOP OF CASING:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. 2" Length 55' Slot Size 0.010"
CASING: Diam. 2" Length 15' Type PVC
DATE DRILLED: 4-25-07

DEPTH (FT)	SOIL SYMBOL	WELL CONSTRUCTION	PID	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM	DEPTH (FT)
0						3.0	SILTY SAND, very fine-grained, dark yellowish orange, damp, no odor	0
5			<128				LIMESTONE, yellowish gray, hard, dry, no odor - moist weathered seams throughout	5
10			<128					10
15			<128					15
20			592			23.0		20
25			264				LIMESTONE with shale seams, medium bluish gray, hard, dry, no odor - moist shaley seams 23'-35'	25
30			<128					30
35			<128				- minimal shale content from 35'-57'	35
40			<128					40

REMARKS:
Intervals and descriptions are estimated due to drilling method with no core sampling. Chloride and PID samples collected at 5' intervals from cuttings.
Advanced boring for MW-13 to 40' on 4-23-07. When boring remained dry on 4-25-07, re-entered & drilled to 70'.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL40 94057272B.GPJ 9/12/08

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-13
TOTAL DEPTH: 70.0'
TOP OF CASING:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. 2" Length 55' Slot Size 0.010"
CASING: Diam. 2" Length 15' Type PVC
DATE DRILLED: 4-25-07

DEPTH (FT)	SOIL SYMBOL	WELL CONSTRUCTION	PID	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM	DEPTH (FT)
40							LIMESTONE with shale seams, medium bluish gray, hard, dry, no odor	40
45								45
50			<128					50
55								55
60			<128				- increased shale content 57'-65'	60
65								65
70			<128			70.0		70
							Bottom of boring at 70.0'	
75								75
80								80

REMARKS:
Intervals and descriptions are estimated due to drilling method with no core sampling. Chloride and PID samples collected at 5' intervals from cuttings.
Advanced boring for MW-13 to 40' on 4-23-07. When boring remained dry on 4-25-07, re-entered & drilled to 70'.

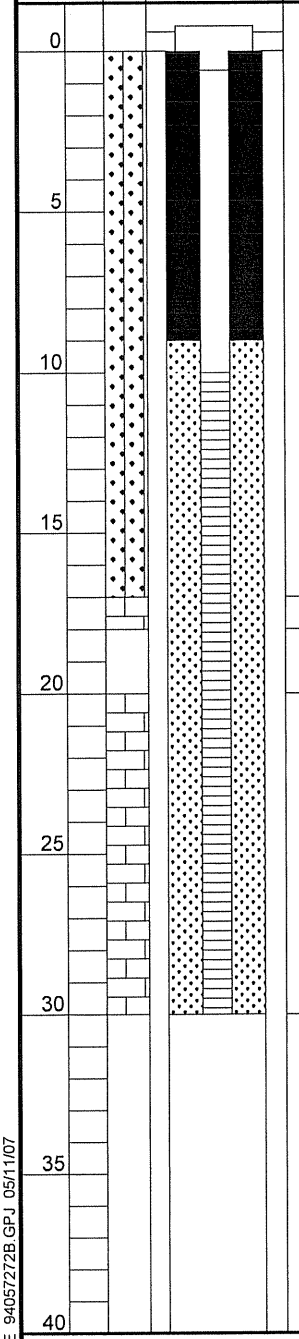
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Terracon

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-14
TOTAL DEPTH: 30.0'
SURFACE ELEVATION:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 8.25"
SCREEN: Diam. 2" Length 20' Slot Size 0.010"
CASING: Diam. 2" Length 10' Type PVC
DATE DRILLED: 04-24-07



DEPTH (FT)	PID	CHLORIDE	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0						
	0					SILTY SAND with sand seams, very fine-grained, moderate reddish orange, very slightly moist, no odor
	0					- moderate brown clayey silt seams from 1'-2'
	0					
	0					
5	0	<128				
	0					
	0					
	0					
	0					- cemented and increased silt from 8'-10'
10	0	496				
	1.1	592				- moist 10'-11'
	0					
	1.7	1036				- moist clayey seam 12'-13'
	1.7					- increasingly sandy 13'-14.5'
15	1.8	704				- moist clayey seam 14.5'-15'
	1.4					- increasingly sandy 15.5'-17'
	1.4	300			17.0	
	--				18.0	LIMESTONE, yellowish gray, hard, dry, no odor
	--					NO RECOVERY-observed limestone as below
20	--				20.0	
	1.8	236				LIMESTONE with occasional shale seams, medium bluish gray, hard, dry with slightly moist seams, no odor
	2.0					
	2.1	<128				
	0					
25	--					
	--					
	--					
	--					
	--					
30	0	128			30.0	
						Bottom of boring at 30.0'
35						
40						

REMARKS:
No sampling from 23'-29'. Collected sample at 29'-30' from bottom of auger.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272B.GPJ 05/11/07

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-15
TOTAL DEPTH: 70.0'
SURFACE ELEVATION:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. 2" Length 55' Slot Size 0.010"
CASING: Diam. 2" Length 15' Type PVC
DATE DRILLED: 04-23-07

DEPTH (FT)	SOIL SYMBOL	WELL CONSTRUCTION	PID	CHLORIDE	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM	DEPTH (FT)
0							4.0	SILTY SAND, very fine-grained, dark yellowish orange, damp, no odor	0
5			1.8	<128				LIMESTONE with shale seams, yellowish gray, hard, dry, no odor - very moist weathered seams 5'-10'	5
10			4.5	152				- slightly moist weathered seams 10'-25'	10
15			0	<128					15
20			0	264					20
25			0	704			29.0		25
30			2.5	544				LIMESTONE with shale seams, medium bluish gray, hard, dry, no odor - very slightly moist seams 30'-40'	30
35			1.1	<128					35
40			1.4	<128					40

REMARKS:
Intervals and descriptions are estimated due to drilling method with no core sampling. Chloride and PID samples collected at 5' intervals from cuttings.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272B.GPJ 05/11/07

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-15
TOTAL DEPTH: 70.0'
SURFACE ELEVATION:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Air Rotary
BORE HOLE DIAMETER: 7 7/8"
SCREEN: Diam. 2" Length 55' Slot Size 0.010"
CASING: Diam. 2" Length 15' Type PVC
DATE DRILLED: 04-23-07

DEPTH (FT)	SOIL SYMBOL	WELL CONSTRUCTION	PID	CHLORIDE	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM	DEPTH (FT)
40								LIMESTONE with shale seams, medium bluish gray, hard, dry, no odor	40
45			0	<128					45
50			0	<128					50
55			0	<128				- grading to light bluish gray at 53'	55
60			0	264					60
65			0.8	412				- very slightly moist seams 60'-70'	65
70			0.0				70.0		70
								Bottom of boring at 70.0'	
75									75
80									80

REMARKS:
Intervals and descriptions are estimated due to drilling method with no core sampling. Chloride and PID samples collected at 5' intervals from cuttings.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

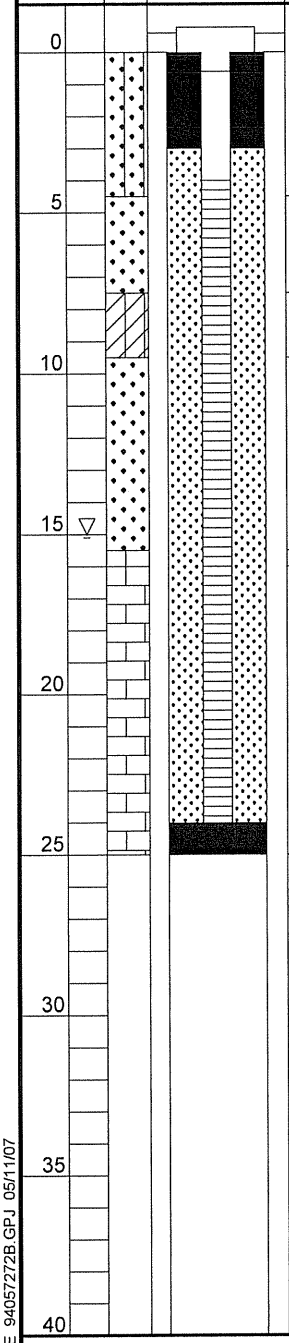
MWL-CHLORIDE 94057272B.GPJ 05/11/07

b

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-16
TOTAL DEPTH: 25.0'
SURFACE ELEVATION:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 8.25"
SCREEN: Diam. 2" Length 20' Slot Size 0.010"
CASING: Diam. 2" Length 4' Type PVC
DATE DRILLED: 04-26-07



DEPTH (FT)	PID	CHLORIDE	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0	0					
	0					SILTY SAND, very fine-grained, moderate reddish orange, very slightly moist, no odor
	0					
	0	<128			4.5	
5	0					SAND, very fine-grained, grayish orange, slightly moist, no odor
	0					
	0				7.5	
	0					SANDY CLAYEY SILT, moderate reddish brown, moderate cementation, moist, no odor
	0	1200			9.5	
10	0					SAND, very fine-grained, grayish orange, moist to wet, no odor
	0					
	0	412				- 1/2" clay seam at 11.2'
	0	1112				- silty sand seam from 12.5'-12.8'
	0					- grading to dark yellowish orange and very moist at 12.5'
15 ▽	0	1384				
	0	1720			15.5	- wet at 15'
	--				16.0	LIMESTONE, yellowish gray, hard, dry, no odor
	--					LIMESTONE with shale seams, medium bluish gray, hard, dry with moist seams, no odor
20	--					
	--					
	--					
	--					
25	0	<128			25.0	
						Bottom of boring at 25.0'
30						
35						
40						

REMARKS:
No sampling from 16'-24'. Sample at 24'-25' was collected off bottom of auger. The 24'-25' interval caved while trying to set the well.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272B.GPJ 05/11/07

SOIL BORING / MONITORING WELL LOG

PROJECT: BALLINGER SEEP
PROJECT NUMBER: 94057272B
CLIENT: Railroad Commission of Texas
BORING / WELL NUMBER: MW-17
TOTAL DEPTH: 30.0'
SURFACE ELEVATION:
FIELD PERSONNEL: Y. Morgan

DRILLING COMPANY: Universal Drilling
DRILLER: K. Barge
DRILLING METHOD: Hollow Stem Auger
BORE HOLE DIAMETER: 8.25"
SCREEN: Diam. 2" Length 20' Slot Size 0.010"
CASING: Diam. 2" Length 10' Type PVC
DATE DRILLED: 04-27-07

DEPTH (FT)	PID	CHLORIDE	SAMPLES	SAMPLE INTERVAL	DESCRIPTION INTERVAL	DESCRIPTION OF STRATUM
0						
	11					SILTY SAND with sand seams, very fine-grained, moderate reddish orange, slightly moist, no odor
	0					
	0.3					
	1.7	<128				
5	1.3					
	1.4					
	0.7					- very high sand content 6'-10'
	0					
	0					
10	0	<128				
	0					
	0.4					
	0					
	0.7	<128				- silt seam from 13'-13.3'
15	1.1				15.0	- very high sand content from 13.3'-15'
	1.1	208				SILTY CLAYEY SAND, moderate reddish orange, low to medium cementation, moist, no odor
	1.5					
	1.0	<128			18.5	
	1.7				19.5	SAND, very fine-grained, grayish orange, slightly moist, no odor
20 ▽	1.9					GRAVELLY SAND grading to SANDY GRAVEL, sub-rounded to angular gravel up to 3" diameter, very fine-grained to coarse sand, poorly sorted, moderate reddish orange, moist grading to wet, no odor
	2.5					
	2.5	<128			22.0	
	1.8					LIMESTONE with shale seams, medium bluish gray, dry with moist seams, no odor
25						
30	0				30.0	
						Bottom of boring at 30.0'
35						
40						

REMARKS:
No sampling from 23'-29'. Collected sample at 29'-30' from bottom of auger.

THIS LOG SHOULD NOT BE USED SEPARATELY FROM THE ORIGINAL REPORT.

Terracon

MWL-CHLORIDE 94057272B.GPJ 05/11/07

Terracon

APPENDIX C

Table 1 – Summary of Soil Data – BTEX/TPH/Chloride
Table 2 – Summary of Groundwater Data – BTEX/TPH
Table 3 – Summary of Groundwater Data – Anions, Cations, Conductivity, TDS
Table 4 – Summary of Groundwater Field Data
Table 5 – Groundwater/Surface Water Elevation Data
Table 6 – Summary of Surface Water Data – BTEX/TPH
Table 7 – Summary of Surface Water Data – Anions, Cations, Conductivity, TDS
Table 8 – Summary of TWDB Water Well Data – Anions, Cations, Conductivity, TDS
Table 9 – Oil and Gas Well Data

Table 1
Summary of Soil Data - BTEX/TPH/Chloride

Ballinger Seep
Runnels County, Texas

Sample	Depth (Feet)	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH (mg/kg)				Chloride (mg/kg)
							C_6-C_{12}	>C_{12}-C_{28}	>C_{28}-C_{35}	C_6-C_{35}	
MW-1	11.0-12.0	7/17/2006	<0.0052	<0.0052	<0.0052	<0.0052	<20	<20	<20	<20	992
MW-1 Dup	11.0-12.0	7/17/2006	<0.0048	<0.0048	<0.0048	<0.0048	<20	<20	<20	<20	--
MW-2	15.0-16.0	7/17/2006	<0.0048	<0.0048	<0.0048	<0.0048	<20	<20	<20	<20	1,030
MW-3	4.0-5.0	7/18/2006	<0.0048	<0.0048	<0.0048	<0.0048	<20	<20	<20	<20	5,490
MW-5	4.0-5.0	7/18/2006	<0.0049	<0.0049	<0.0049	<0.0049	<20	<20	<20	<20	2,200
	11.0	7/18/2006	<0.0048	<0.0048	<0.0048	<0.0048	<20	<20	<20	<20	2,050
MW-7	20.0-21.0	7/20/2006	<0.0046	<0.0046	<0.0046	<0.0046	<20	<20	<20	<20	730
TCEQ TRRP Tier 1 Residential Critical PCL 30-Acre Source Area Class 2 Groundwater			**0.013**	**4.1**	**3.8**	**61**	**Carbon-Range Specific**				**NP**
RRC Class 1 and Class 2 Residential Soil-to-Groundwater Protection Limits for Delineation and Remediation			**0.026**	**8.2**	**7.6**	**120**	**10,000**				**NP**

-- = Not Analyzed
NP = Not Provided

Table 2
Summary of Groundwater Data - BTEX/TPH

Ballinger Seep
Ballinger, Texas

Sample	Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	TPH (mg/L)			
						C_6-C_{12}	>C_{12}-C_{28}	>C_{28}-C_{35}	C_6-C_{35}
MW-1	7/19/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
MW-1 Dup	7/19/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
MW-2	7/20/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
MW-3	7/20/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
MW-4	7/20/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
MW-5	7/20/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
MW-7	8/15/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
Trip Blank	7/19/2006	<0.005	<0.005	<0.005	<0.005	--	--	--	--
Trip Blank	7/19/2006	<0.005	<0.005	<0.005	<0.005	--	--	--	--
Trip Blank	7/20/2006	<0.005	<0.005	<0.005	<0.005	--	--	--	--
Trip Blank	8/15/2006	<0.005	<0.005	<0.005	<0.005	--	--	--	--
Equipment Blank	7/19/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
TCEQ TRRP Tier 1 Residential Critical PCL 30-Acre Source Area Class 2 Groundwater		**0.005**	**1.0**	**0.7**	**10**	**Carbon-Range Specific**			
RRC Class 1 and Class 2 Impacted Groundwater Delineation and Remediation Limits		**0.005**	**1.0**	**0.7**	**10**	**1.1**			

-- = Not Analyzed

Table 3
Summary of Groundwater Data - Anions, Cations, Conductivity, TDS

Ballinger Seep
Ballinger, Texas

Sample	Date	Anions							Cations				Conductivity	Total Dissolved Solids
		Alkalinity, Carbonate	Alkalinity, Bicarbonate	Bromide	Chloride (Method 300.0)	Chloride (Method 4500B)[6]	Nitrate	Sulfate	Calcium	Magnesium	Potassium	Sodium		
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(umho/cm)	(mg/L)
MW-1	7/19/2006	<2	380	<2	1,550	2,140	<0.5	657	330	83	15	1,700	7,500	4,980
	5/24/2007	<10	293	2.52	2,290	--	0.456-J	470	478	85.2	5.84	970	7,650	5,260
	7/8/2008	<10	320	12.7	3,020	--	2.92	876	512	132	10.6	1,500	10,400	7,080
	8/5/2008	<10	300	8.58	3,330	--	1.18	744	521	135	13.1	1,440	11,100	7,380
MW-1 Dup	7/19/2006	<2	380	<2	1,530	--	2.6	657	330	82	14	1,700	7,300	4,790
MW-Dup	5/24/2007	<10	291	2.59	2,260	--	0.467-J	473	466	86.6	5.59	944	7,610	4,850
MW-2	7/20/2006	<2	310	<2	3,860	12,100	13	734	1,300	550	59	9,100	3200 (4,930)[6]	23,300
	5/24/2007	<10	291	7.88	6,750	--	<0.1	736	936	257	14.2	2,960	19,000	13,100
	7/9/2008	<10	291	34.5	4,330	--	<0.1	816	596	177	9.9	1,850	15,700	9,680
	8/5/2008	<10	299	6.33	4,110	--	<0.1	786	588	162	9.91	1,730	14,600	8,970
MW-3	7/20/2006	<2	150	<2	3,050	7,240	19	1,020	820	220	44	5,600	2000 (2,000)[6]	14,600
	5/24/2007	<10	268	12.4	13,300	--	<0.1	1,250	957	229	22.3	6,370	35,000	23,500
	7/8/2008	<10	265	38.9-J	18,200	--	<0.2	1,790	1,720	487	17.2	8,890	56,800	37,600
	8/5/2008	<10	237	32.8	21,200	--	<1.0	1,750	2,180	622	17.8	8,320	61,700	38,000
MW-4	7/20/2006	<2	190	<2	2,440	5,080	16	1,410	920	320	45	3,000	15,000	11,700
	5/24/2007	<10	310	2.35	2,160	--	0.222-J	463	592	138	5.85	1,180	7,340	4,860
	7/9/2008	<10	321	7.4	4,680	--	<0.1	1,100	916	243	7.4	1,750	17,300	11,700
	8/5/2008	<10	332	7.29	4,650	--	<0.1	1,170-J	996	260	8.32	1,820	17,400	11,100
MW-5	7/20/2006	<2	300	<2	5,920	23,000	1,900	554	1,200	510	240	21,000	57,000	38,900
	5/25/2007	<10	246	13	10,500	--	1.15	839	1,040	455	27.3	4,890	25,400	17,000
	7/8/2008	<10	263	39.8-J	18,400	--	2.67	1,310	1,830	980	53.8	7,620	56,600	39,100
	8/6/2008	<10	255	30	19,000	--	1.87-J	1,440	1,780	878	63	8,850	58,400	37,000
MW-Duplicate	7/8/2008	<10	264	41.6-J	19,800	--	2.16	1,360	1,920	1,000	55.1	7,850	56,300	38,800
MW-Dup	8/6/2008	<10	259	80.2	18,500	--	16.8	1,360	1,820	894	58.2	8,520	59,800	37,800
MW-6	5/25/2007	<10	280	14.3	10,600	--	6	785	1,360	303	25.6	4,840	29,300	20,300
MW-7	8/15/2006	<2	290	<2	1,880	3,580	<0.5	1,840	1,000	530	19	990	110,000 (4,350)[6]	54,600 (8,600)[6]
	5/23/2007	<10	449	2.78	2,350	--	0.26-J	404	427	124	5.82	1,100	7,860	5,180
	7/8/2008	<10	257	10.1	6,140	--	<0.1	1,520	1,450	652	14.5	1,520	21,800	16,400
	8/5/2008	<10	253	9.25	6,700	--	0.181-J	1,390	1,350	603	14.3	1,440	22,600	15,400
MW-8	5/23/2007	<10	482	2.03	1,750	--	0.672	301	271	69.2	2.97	917	6,190	3,940
	7/9/2008	<10	410	11	1,930	--	1.55	409	374	130	5	742	6,820	4,800
	8/5/2008	<10	401	3.04	1,750	--	0.208-J	420	358	129	5.36	702	6,290	4,170
MW-9	5/25/2007	<10	213	7.21	6,280	--	<0.1	1,520	1,350	612	29.7	1,880	17,300	12,500
	7/8/2008	<10	245	10	6,540	--	0.14-J	1,690	1,310	561	22.1	1,810	23,600	15,700
	8/5/2008	<10	247	9.34	6,320	--	0.156-J	1,590	1,300	552	22	1,790	22,400	15,000

Table 3
Summary of Groundwater Data - Anions, Cations, Conductivity, TDS

Ballinger Seep
Ballinger, Texas

Sample	Date	Anions							Cations				Conductivity	Total Dissolved Solids
		Alkalinity, Carbonate	Alkalinity, Bicarbonate	Bromide	Chloride (Method 300.0)	Chloride (Method 4500B)[6]	Nitrate	Sulfate	Calcium	Magnesium	Potassium	Sodium		
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(umho/cm)	(mg/L)
MW-10	5/25/2007	<10	344	2.3	670	--	0.345-J	41.2	193	19.1	1.44	270	2,400	1,450
MW-11	5/25/2007	<10	321	0.669-J	516	--	<0.1	229	258	69.6	6.31	157	2,380	1,480
MW-12	5/22/2007	<10	293	6.18	4,610	--	0.79	376	662	271	11	1,810	14,000	9,090
	5/25/2007	<10	397	3.42	1,000	--	1.74	91.7	223	62.9	3.79	483	3,450	2,100
MW-13	8/6/2008	<10	213	7.33	2,330	--	0.852	1,280	500	360	10.8	850	8,870	6,030
MW-14	5/23/2007	<10	227	0.798-J	793	--	<0.1	1,400	433	194	11.5	328	4,440	3,380
MW-15	5/25/2007	<10	239	0.964-J	484	--	<0.1	1,280	234	146	8.04	375	3,490	2,690
MW-16	5/24/2007	<10	179	5.32	4,930	--	<0.1	1,120	888	381	25.6	1,630	14,800	11,300
	7/9/2008	<10	264	6.37	8,630	--	<0.1	1,500	1,630	623	11	2,910	30,000	21,100
	8/6/2008	<10	248	11.6	7,990	--	0.252-J	1,410	1,480	614	12.1	2,620	26,900	16,800
MW-17	5/24/2007	<10	313	<0.3	36.6	--	0.876	272	80.3	47.1	1.32	93.8	1,130	740
TCEQ TRRP Tier 1 Residential Critical PCL 30-Acre Source Area Class 2 Groundwater		NP	NP	NP	300 [1, 2]		10	300 [1, 3]	NP[1]	NP[1]	NP[1]	NP[1]	NP	NP
RRC Draft Guidance: Field Guide for the Assessment and Cleanup of Produced Water Releases		NP	NP	NP	300 [4]		NP	NP	NP	NP	NP	NP	NP	NP
EPA National Primary Drinking Water Standards		NP	NP	NP	NP		10	NP	NP	NP	NP	NP	NP	NP
EPA National Secondary Drinking Water Standards[5]		NP	NP	NP	250		NP	250	NP	NP	NP	NP	NP	500

[1] The TCEQ states that these compounds are not necessarily considered to be of concern to human health; however, they may present aesthetic and/or ecological issues.

[2] The TCEQ states that chloride is not necessarily considered to be of concern to human health; however, the concentration of this compound should not be high enough to cause objectionable characteristics (e.g., taste, odor) or make a natural resource unfit for use. The TCEQ generally requires that drinking water not exceed a chloride concentration of 300 mg/L.

[3] The TCEQ states that sulfate is not necessarily considered to be of concern to human health; however, the concentration of this compound should not be high enough to cause objectionable characteristics (e.g., taste, odor) or make a natural resource unfit for use. The TCEQ generally requires that drinking water not exceed a sulfate concentration of 300 mg/L.

[4] The RRC draft guidance entitled Field Guide for the Assessment and Cleanup of Produced Water Releases, dated February 17, 2006, indicates that delineation of a produced water release should be to background or 300 mg/L chloride. However, no cleanup level is specified and it is indicated that releases to groundwater will be evaluated on a case by case basis.

[5] EPA National Secondary Drinking Water Standards are recommended standards related to cosmetic and aesthetic effects and are non-enforceable guidelines.

[6] Rerun analyses performed by A4 Scientific.

NP = Not Provided

-- = Not Analyzed

Table 4
Summary of Groundwater Field Data

Ballinger Seep
Runnels County, Texas

Sample	Date	Chloride [1] (mg/L)	pH [2]	Conductivity [2] (uS/cm)	Temperature [2] (^{0}C)	Dissolved Oxygen [2] (mg/L)	Oxidation-Reduction Potential [2] (mV)
MW-1	7/19/2006	--	6.68	7,088	23.96	0.96	49.9
	7/21/2006	2,373	--	--	--	--	--
	5/24/2007	--	6.75	6,855	19.95	1.44	10.6
	7/8/2008	--	6.6	10,596	24.58	0.89	71.6
	8/5/2008	--	6.98	12,245	25.78	0.71	119.3
MW-2	7/20/2006	--	6.76	29,983	24.09	4.25	106.9
	7/21/2006	>6,175	--	--	--	--	--
	5/24/2007	--	6.65	17,517	21.12	0.29	-51
	7/9/2008	--	6.59	12,508	21.92	2.54	-2.9
	8/5/2008	--	7.01	13,768	24.51	0.6	118.2
MW-3	7/21/2006	>6,175	--	--	--	--	--
	5/24/2007	--	8.26	31,713	20.63	0.57	-64.4
	7/8/2008	--	6.26	48,507	24.75	1.12	16.8
	8/5/2008	--	6.54	56,381	27.44	0.39	144
MW-4	7/21/2006	6,175	--	--	--	--	--
	5/24/2007	--	6.71	7,043	20.28	0.93	-29.8
	7/9/2008	--	6.44	13,982	22.64	0.89	75.2
	8/5/2008	--	6.72	15,668	24.58	0.93	144.7
MW-5	7/21/2006	>6175	--	--	--	--	--
	5/25/2007	--	6.72	25,957	21.69	1.77	2.8
	8/5/2008	--	5.92	46,340	21.51	7.05	123.3
MW-6	5/25/2007	--	6.44	28,007	19.9	2.78	74.3
	5/30/2007	>6175	--	--	--	--	--
MW-7	8/15/2006	4,176	--	--	--	--	--
	5/23/2007	--	6.85	7,139	20.04	4.61	-83.4
	7/8/2008	--	6.27	17,890	21.89	1.79	25.5
	8/5/2008	--	6.52	18,080	21.97	1.06	91.6
MW-8	5/23/2007		7.02	5,544	19.62	4.08	7.8
	5/30/2007	2,772	--	--	--	--	--
	7/9/2008	--	6.66	6,371	22.28	2.2	9.2
	8/5/2008	--	6.98	6,321	21.8	0.72	104.4
MW-9	5/25/2007	--	6.62	14,671	19.05	0.37	-97.7
	5/30/2007	>6175	--	--	--	--	--
	7/8/2008	--	6.43	18,624	22.81	1.86	12.9
	8/5/2008	--	6.84	20,080	25.61	0.79	144
MW-10	5/25/2007	--	7.03	2,332	20.33	3.98	37.2
MW-11	5/25/2007	--	7.3	2,216	20.15	3.9	-18.2
	5/30/2007	969	--	--	--	--	--
MW-12	5/25/2007	--	7.02	4,772	21.26	2.49	17.3
	5/30/2007	3,524	--	--	--	--	--
MW-14	5/23/2007	--	6.92	4,112	20.91	3.88	11.7
	5/30/2007	1,483	--	--	--	--	--
MW-15	5/25/2007	--	7.33	3,682	21.65	2.96	-51.5
	5/30/2007	523	--	--	--	--	--
MW-16	5/24/2007	--	6.72	14,990	19.52	0.25	-56.7
	5/30/2007	>6175	--	--	--	--	--
	7/9/2008	--	6.35	23,307	22.01	0.79	37.9
	8/6/2008	--	6.49	22,119	21.41	0.62	74.8
MW-17	5/24/2007	--	7.18	1,051	19.39	4.33	19.9
	5/30/2007	32	--	--	--	--	--

[1] Chloride field data measured utilizing Hach Quantab® strips.

[2] Field parameter data measured utilizing a YSI 556 MPS Meter.

-- = Not Measured

TABLE 5
Groundwater/Surface Water Elevation Data

Ballinger Seep
Ballinger, Texas

Monitor Well	Gauging Date	Total Depth	Ground Surface Elevation	Top of Casing Elevation	Depth to Groundwater	Water Column Thickness	Groundwater Elevation
MW-1	7/21/2006	25.24	1621.4	1620.88	9.54	15.70	1611.34
	8/15/2006				9.51	15.73	1611.37
	8/21/2006				9.69	15.55	1611.19
	4/23/2007				9.34	15.90	1611.54
	5/21/2007				8.09	17.15	1612.79
	5/24/2007				8.61	16.63	1612.27
	5/30/2007				7.93	17.31	1612.95
	7/7/2008				9.86	15.38	1611.02
	8/4/2008				9.83	15.41	1611.05
MW-2	7/21/2006	50.05	1621.6	1621.58	21.40	28.65	1600.18
	8/15/2006				18.71	31.34	1602.87
	8/21/2006				18.79	31.26	1602.79
	4/23/2007				18.18	31.87	1603.40
	5/21/2007				17.11	32.94	1604.47
	5/24/2007				17.42	32.63	1604.16
	5/30/2007				16.31	33.74	1605.27
	7/7/2008				17.04	33.01	1604.54
	8/4/2008				16.69	33.36	1604.89
MW-3	7/21/2006	14.92	1636.6	1636.28	14.33	0.59	1621.95
	8/15/2006				5.39	9.53	1630.89
	8/21/2006				7.13	7.79	1629.15
	4/23/2007				3.18	11.74	1633.10
	5/21/2007				2.06	12.86	1634.22
	5/24/2007				2.11	12.81	1634.17
	5/30/2007				2.82	12.10	1633.46
	7/7/2008				4.95	9.97	1631.33
	8/4/2008				5.30	9.62	1630.98
MW-4	7/21/2006	25.13	1621.1	1620.68	20.59	4.54	1600.09
	8/15/2006				10.59	14.54	1610.09
	8/21/2006				10.68	14.45	1610.00
	4/23/2007				10.54	14.59	1610.14
	5/21/2007				8.96	16.17	1611.72
	5/24/2007				9.39	15.74	1611.29
	5/30/2007				9.08	16.05	1611.60
	7/7/2008				10.58	14.55	1610.10
	8/4/2008				10.42	14.71	1610.26
MW-5	7/21/2006	55.11	1666.4	1665.96	52.50	2.61	1613.46
	8/15/2006				52.54	2.57	1613.42
	8/21/2006				52.62	2.49	1613.34
	4/23/2007				51.99	3.12	1613.97
	5/21/2007				49.33	5.78	1616.63
	5/25/2007				49.75	5.36	1616.21
	5/30/2007				49.44	5.67	1616.52
	7/7/2008				52.60	2.51	1613.36
	8/4/2008				52.61	2.50	1613.35

TABLE 5
Groundwater/Surface Water Elevation Data

Ballinger Seep
Ballinger, Texas

Monitor Well	Gauging Date	Total Depth	Ground Surface Elevation	Top of Casing Elevation	Depth to Groundwater	Water Column Thickness	Groundwater Elevation
MW-6	7/21/2006	40.29	1659.3	1658.89	DRY		
	8/15/2006				DRY		
	8/21/2006				DRY		
	4/23/2007				DRY		
	5/21/2007				18.16	22.13	1640.73
	5/25/2007				18.58	21.71	1640.31
	5/30/2007				17.89	22.40	1641.00
	7/7/2008				DRY		
	8/4/2008				39.88	0.41	1619.01
MW-7	7/21/2006	30.23	1609.0	1608.62	DRY		
	8/15/2006				24.80	5.43	1583.82
	8/21/2006				27.45	2.78	1581.17
	4/23/2007				20.15	10.08	1588.47
	5/21/2007				17.11	13.12	1591.51
	5/23/2007				17.23	13.00	1591.39
	5/30/2007				17.58	12.65	1591.04
	7/7/2008				21.43	8.80	1587.19
	8/4/2008				21.32	8.91	1587.30
MW-8	4/27/2007	29.65	1607.0	1606.5	DRY		
	5/21/2007				14.35	15.30	1592.2
	5/23/2007				14.45	15.20	1592.1
	5/30/2007				14.45	15.20	1592.1
	7/7/2008				19.39	10.26	1587.1
	8/4/2008				19.72	9.93	1586.8
MW-9	4/27/2007	31.57	1610.6	1610.3	29.42	2.15	1580.9
	5/21/2007				21.22	10.35	1589.1
	5/25/2007				21.56	10.01	1588.7
	5/30/2007				21.65	9.92	1588.7
	7/7/2008				23.54	8.03	1586.8
	8/4/2008				24.35	7.22	1586.0
MW-10	4/27/2007	59.78	1664.2	1664.0	DRY		
	5/21/2007				59.62	0.16	1604.4
	5/25/2007				46.99	12.79	1617.0
	5/30/2007				59.78	0.00	1604.2
	7/7/2008				DRY		
	8/4/2008				DRY		
MW-11	4/27/2007	69.75	1664.7	1664.5	DRY		
	5/21/2007				45.70	24.05	1618.8
	5/25/2007				49.08	20.67	1615.4
	5/30/2007				57.29	12.46	1607.2
	7/7/2008				DRY		
	8/4/2008				DRY		

TABLE 5
Groundwater/Surface Water Elevation Data

Ballinger Seep
Ballinger, Texas

Monitor Well	Gauging Date	Total Depth	Ground Surface Elevation	Top of Casing Elevation	Depth to Groundwater	Water Column Thickness	Groundwater Elevation
MW-12	4/27/2007	40.01	1664.4	1664.2	DRY		
	5/21/2007				38.51	1.50	1625.7
	5/25/2007				36.21	3.80	1628.0
	5/30/2007				38.47	1.54	1625.7
	7/7/2008				39.51	0.50	1624.7
	8/4/2008				39.64	0.37	1624.6
MW-13	4/27/2007	69.96	1664.7	1664.5	DRY		
	5/21/2007				DRY		
	5/25/2007				DRY		
	5/30/2007				DRY		
	7/7/2008				DRY		
	8/4/2008				48.43	21.53	1616.1
MW-14	4/27/2007	30.05	1605.8	1605.5	DRY		
	5/21/2007				23.39	6.66	1582.1
	5/23/2007				25.00	5.05	1580.5
	5/30/2007				18.70	11.35	1586.8
	7/7/2008				19.96	10.09	1585.5
	8/4/2008				20.36	9.69	1585.1
MW-15	4/27/2007	71.45	1671.8	1671.5	68.67	2.78	1602.8
	5/21/2007				67.01	4.44	1604.5
	5/25/2007				67.31	4.14	1604.2
	5/30/2007				67.35	4.10	1604.2
	7/7/2008				68.42	3.03	1603.1
	8/4/2008				68.59	2.86	1602.9
MW-16	4/27/2007	23.79	1601.6	1601.5	15.10	8.69	1586.4
	5/21/2007				13.25	10.54	1588.3
	5/24/2007				13.37	10.42	1588.1
	5/30/2007				13.42	10.37	1588.1
	7/7/2008				14.56	9.23	1586.9
	8/4/2008				14.84	8.95	1586.7
MW-17	4/27/2007	29.74	1606.2	1606.0	21.44	8.30	1584.6
	5/21/2007				17.20	12.54	1588.8
	5/24/2007				17.40	12.34	1588.6
	5/30/2007				17.42	12.32	1588.6
	7/7/2008				20.19	9.55	1585.8
	8/4/2008				20.71	9.03	1585.3

TABLE 5
Groundwater/Surface Water Elevation Data

Ballinger Seep
Ballinger, Texas

Monitor Well	Gauging Date	Total Depth	Ground Surface Elevation	Top of Casing Elevation	Depth to Groundwater	Water Column Thickness	Groundwater Elevation
Tributary at Seep	8/21/2006	NA	NA	1610.1	2.14	NA	1608.0
	4/23/2007				1.95	NA	1608.2
	5/21/2007				1.95	NA	1608.2
	5/30/2007				1.90	NA	1608.2
	7/7/2008				2.01	NA	1608.1
	8/4/2008				2.01	NA	1608.1
Colorado River	8/21/2006	NA	NA	1585.5	0.38	NA	1585.1
	4/23/2007				0.21	NA	1585.3
	5/30/2007			1590.3	4.43	NA	1585.8
	7/7/2008				4.64	NA	1585.6
	8/4/2008				4.53	NA	1585.7
Seep Monitor Point	4/23/2007	NA	NA	1611.9	2.80	NA	1609.1
	5/30/2007				2.34	NA	1609.5
	7/7/2008				3.57	NA	1608.3
	8/4/2008				4.51	NA	1607.4

Note: All data are in feet.
NA = Not Applicable

Table 6
Summary of Surface Water Data - BTEX/TPH

Ballinger Seep
Ballinger, Texas

Sample	Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	TPH (mg/L)			
						C_6-C_{12}	>C_{12}-C_{28}	>C_{28}-C_{35}	C_6-C_{35}
Seep-1	7/19/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
SW-Trib-1	7/19/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
SW-Trib-2	7/19/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
SW-Trib-2 Dup	7/19/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
SW-CR-Down	7/20/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
SW-CR-Up	7/20/2006	<0.005	<0.005	<0.005	<0.005	<5.0	<5.0	<5.0	<5.0
TCEQ TRRP Aquatic Life Acute Surface Water Risk-Based Exposure Limits (SWRBELs)		NP	8.7	6.54	4.02	NP			
TCEQ TRRP Aquatic Life Chronic Surface Water Risk-Based Exposure Limits (SWRBELs)		0.13	1.45	1.09	1.34	NP			
TCEQ TRRP Human Health Surface Water Risk-Based Exposure Limits (Freshwater Fish Criteria)		0.106	15	2.1	NP	NP			
TCEQ TRRP Human Health Surface Water Risk-Based Exposure Limits (Water and Freshwater Fish Criteria)		0.005	1.0	0.53	NP	NP			
TCEQ TRRP Ecological Benchmarks for Surface Water (RG-263)		0.13	1.45	1.09	1.34	NP			

NP = Not Provided

Table 7
Summary of Surface Water Data - Anions, Cations, Conductivity, TDS

Ballinger Seep
Ballinger, Texas

Sample	Date	Anions							Cations				Conductivity	Total Dissolved Solids
		Alkalinity, Carbonate (mg/L)	Alkalinity, Bicarbonate (mg/L)	Bromide (mg/L)	Chloride (Method 300.0) (mg/L)	Chloride (Method 4500Bl[3] (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	(umho/cm)	(mg/L)
Seep-1/ Lower Seep-1/ PVC-1	7/19/2006	<2	2,400	<2	1,060	--	<0.5	320	130	38	13	1,000	4,300	2,430
	5/22/2007	<10	308	1.44	1,620	--	<0.1	321	262	59.6	7.49	778	5,580	3,560
	7/9/2008	<10	264	12.9	2,140	--	3.5	858	274	66.3	7.09	1,330	8,330	4,660
SW-Trib-1	7/19/2006	<2	110	<2	1,520	2,220	<0.5	599	250	81	15	1,800	7,400	7,410
	5/22/2007	<10	298	2.22	1,920	--	0.191-J	394	396	74.6	5.9	883	6,660	4,060
	7/9/2008	<10	302	6.22	2,240	--	<0.1	631	371	89.5	10.5	1,030	7,880	5,400
	8/5/2008	<10	283	5.89	2,440	--	0.242-J	632	399	99.9	10.4	1,070	8,510	5,460
SW-Duplicate	7/9/2008	<10	306	5.49-J	2,210	--	<1.0	633	363	92.1	10.2	1,020	7,970	5,440
SW-Trib-2	7/19/2006	<2	140	<2	1,570	--	<0.5	621	260	88	17	1,900	7,700	4,840
	5/22/2007	<10	213	2.52	2,130	--	<0.1	482	317	77.4	7.48	1,000	7,140	4,660
SW-Trib-2 Dup	7/19/2006	<2	150	<2	1,580	--	<0.5	631	260	87	16	1,900	7,700	4,840
SW-Trib-3	5/22/2007	<10	223	2.96	2,370	--	0.175-J	507	466	130	11.1	1,950	8,250	5,410
SW-Trib-4	5/22/2007	<10	303	6.38	5,290	--	<0.1	604	494	117	19.2	3,140	15,600	10,200
SW-Trib-5	5/22/2007	<10	248	5.56	4,180	--	<0.1	548	355	97.6	17.2	2,760	13,600	8,820
SW-Trib-6	5/22/2007	<10	186	6.15	5,300	--	0.641	575	399	108	11.1	2,940	15,300	9,600
SW-CR-Up/ SW-CR-50' Up	7/20/2006	<2	140	<2	621	--	<0.5	1,570	370	140	9.1	380	3,600	3,590
	5/22/2007	<10	188	0.656-J	222	--	0.852	319	131	55.2	7.5	130	1,520	1,030
	7/9/2008	<10	125	6.77	793	--	1.66	1,210	311	138	10.1	400	4,300	3,140
	8/5/2008	<10	127	1.68	468	--	1.79	1,370	380	138	6.08	234	3,530	2,970
SW-Dup	8/5/2008	<10	128	1.69	478	--	1.79	1,380	375	137	5.94	230	3,540	2,960
SW-CR-250' Up	5/22/2007	<10	189	0.636-J	228	--	0.854	331	128	56.5	6.66	127	1,500	1,000
SW-CR-1,000' Up	5/22/2007	<10	190	0.655-J	229	--	0.874	336	134	57.8	7.25	138	1,520	1,030
SW-CR-2,500' Up	5/23/2007	<10	206	0.809-J	351	--	1.57	629	223	79.9	8.19	191	2,350	1,610
SW-EC-2,500' Up	5/23/2007	<10	188	0.551-J	158	--	0.463-J	161	84.2	43.2	7.56	86.8	1,100	676
SW-CR-Down/ SW-CR-50' Down	7/20/2006	<2	140	<2	626	620	<0.5	1,560	350	140	10	380	3,700	2,580
	5/22/2007	<10	189	0.633-J	226	--	0.878	323	127	54.2	7.08	130	1,520	1,010
	7/9/2008	<10	123	7.11	787	--	1.81	1,200	305	133	10.1	391	4,290	3,220
	8/5/2008	<10	127	1.69	478	--	1.79	1,540	373	137	6.09	235	3,510	2,960
SW-CR-500' Down	5/23/2007	<10	194	0.639-J	240	--	0.866	355	143	59	7.84	132	1,660	1,100
SW-Dup	5/23/2007	<10	195	0.609-J	240	--	0.876	351	142	59.7	8.12	136	1,660	1,100
SW-CR-900' Down	5/22/2007	<10	189	0.611-J	218	--	0.835	346	128	55.9	7.12	135	1,500	1,030
SW-CR-1,500' Down	5/23/2007	<10	195	0.634-J	233	--	0.894	340	136	55.6	7.67	126	1,610	1,050
SW-CR-2,500' Down	5/23/2007	<10	195	0.627-J	234	--	0.879	340	138	57.2	7.89	127	1,610	1,050

Table 7
Summary of Surface Water Data - Anions, Cations, Conductivity, TDS

Ballinger Seep
Ballinger, Texas

Sample	Date	Anions							Cations				Conductivity	Total Dissolved Solids
		Alkalinity, Carbonate (mg/L)	Alkalinity, Bicarbonate (mg/L)	Bromide (mg/L)	Chloride (Method 300.0) (mg/L)	Chloride (Method 4500B)[3] (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	(umho/cm)	(mg/L)
TCEQ TRRP Aquatic Life Acute Surface Water Risk-Based Exposure Limits (SWRBELs)		NP	NP	NP	860		NP	NP	NP	19.41	NP	NP	NP	NP
TCEQ TRRP Aquatic Life Chronic Surface Water Risk-Based Exposure Limits (SWRBELs)		NP	NP	NP	230		NP	NP	NP	3.235	NP	NP	NP	NP
TCEQ TRRP Human Health Surface Water Risk-Based Exposure Limits (Freshwater Fish Criteria)		NP	NP	NP	NP		NP	NP	NP	NP	NP	NP	NP	NP
TCEQ TRRP Human Health Surface Water Risk-Based Exposure Limits (Water and Freshwater Fish Criteria)		NP	NP	NP	NP		10	NP	NP	NP	NP	NP	NP	NP
TCEQ TRRP Ecological Benchmarks for Surface Water (RG-263)		NP	NP	NP	230		NP	NP	NP	3.23	NP	NP	NP	NP
RRC Draft Guidance: Field Guide for the Assessment and Cleanup of Produced Water Releases		NP	NP	NP	300[1]		NP	NP	NP	NP	NP	NP	NP	NP
EPA National Primary Drinking Water Standards		NP	NP	NP	NP		10	NP	NP	NP	NP	NP	NP	NP
EPA National Secondary Drinking Water Standards[2]		NP	NP	NP	250		NP	250	NP	NP	NP	NP	NP	500

[1] The RRC draft guidance entitled Field Guide for the Assessment and Cleanup of Produced Water Releases, dated February 17, 2006, indicates that delineation of a produced water release should be to background or 300 mg/L chloride. However, no cleanup level is specified and it is indicated that releases to groundwater will be evaluated on a case by case basis.

[2] EPA National Secondary Drinking Water Standards are recommended standards related to cosmetic and aesthetic effects and are non-enforceable guidelines.

[3] Rerun analyses performed by A4 Scientific.

NP = Not Provided

– – = Not Analyzed

Table 8
Summary of Texas Water Development Board (TWDB) Water Well Data - Anions, Cations, Conductivity, TDS

Ballinger Seep
Ballinger, Texas

TWDB Well No.	Well Depth	Elevation	Sample Date	Producing Formation	Anions						Cations				Conductivity	Total Dissolved Solids
					Alkalinity, Carbonate (mg/L)	Alkalinity, Bicarbonate (mg/L)	Bromide (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	(umho/cm)	(mg/L)
4209602	60	1699	6/19/1970	318LDRS	0	284	--	1,450	347	222	450	199	--	410	4,920	3,254
4209603	20	1722	7/7/1970	318LDRS	0	251	--	113	0.4	196	126	30	--	66	1,038	665
4209604	24	1692	6/19/1970	318LDRS	0	540	--	447	315	1,080	386	263	--	207	3,530	2,984
4210102	40	1796	7/9/1970	318LDRS	0	390	--	319	27	205	129	95	--	140	1,790	1,130
4217202	38	1631	7/22/1970	318LDRS	0	423	--	87	34	139	89	42	--	113	1,125	747
4217205	30	1647	7/9/1970	318LDRS	0	439	--	439	200	680	234	148	--	317	3,120	2,259
4217601	135	1678	7/10/1970	318LDRS	0	290	--	590	220	422	307	45	--	354	3,010	2,111
			2/10/1973	318LDRS	0	299	--	580	158	447	296	43	--	335	3,900	2,036
			11/13/1973	318LDRS	0	305	--	530	168	400	275	35	--	340	3,718	1,928
			11/4/1974	318LDRS	0	311	--	463	108	325	244	28	--	275	3,150	1,626
			7/13/1978	318LDRS	0	320	--	443	106	355	247	33	--	288	3,150	1,659
			9/21/1982	318LDRS	0	304	--	422	117.8	370	230	28	--	289	3,129	1,638
4217711	30	1710	6/14/1970	318LDRS	0	234	--	690	284	458	252	134	--	348	3,380	2,299
4217712	45	1711	6/14/1970	318LDRS	0	287	--	750	378	331	193	159	--	399	3,460	2,374
4217714	90	1738	6/19/1970	318LDRS	0	210	--	410	336	249	236	67	--	193	2,340	1,618
4217715	65	1720	6/12/1970	318LDRS	0	259	--	1,290	1,365	690	670	226	--	580	6,130	4,969
			8/6/1985	318LDRS	0	261.15	--	--	--	--	--	--	--	--	--	--
4217804	21	1690	7/19/1970	318LDRS	0	298	--	486	240	286	188	83	--	291	2,620	1,751
4217805	60	1724	6/18/1970	318LDRS	0	298	--	298	290	279	174	36	--	284	2,140	1,528
4217806	32	1720	6/18/1970	318LDRS	0	287	--	202	357	184	187	30	--	202	1,870	1,325
4217807	70	1723	6/18/1970	318LDRS	0	232	--	115	520	139	176	29	--	162	1,710	1,277
4217808	29	1728	6/18/1970	318LDRS	0	368	--	335	456	101	182	89	--	198	2,280	1,564
4217902	12	1732	6/15/1970	318LDRS	0	201	--	163	419	113	211	18	--	129	1,670	1,170
4225107	55	1729	6/24/1970	318LDRS	0	338	--	620	405	245	266	111	--	302	3,170	2,138
4225109	30	1711	7/29/1970	318LDRS	0	389	--	510	200	416	165	80	--	413	2,930	2,004
4225110	25	1712	7/29/1970	318LDRS	0	253	--	379	243	241	190	48	--	250	2,270	1,500
4225202	60	1729	6/15/1970	318LDRS	0	250	--	610	312	237	336	27	--	265	2,900	1,935
4225403	50	1742	6/22/1970	318LDRS	0	282	--	458	420	256	210	91	--	270	2,670	1,864
4332311	70	1742	7/7/1970	318LDRS	0	229	--	740	820	330	476	81	--	357	4,050	2,948
4332601	60	1731	6/20/1970	318LDRS	0	174	--	840	250	253	333	86	--	297	3,330	2,172
4332602	73	1732	6/20/1970	318LDRS	0	337	--	481	344	493	276	87	--	328	3,010	2,205
Average					0	301		509	315	338	258	82		280	2,917	1,956
Concentration (meq/L)					0	5		14	5	7	13	7		12		63
%TDS					0	8		23	8	11	20	11		19		

Table 8
Summary of Texas Water Development Board (TWDB) Water Well Data - Anions, Cations, Conductivity, TDS

Ballinger Seep
Ballinger, Texas

TWDB Well No.	Well Depth	Elevation	Sample Date	Producing Formation	Anions						Cations				Conductivity	Total Dissolved Solids
					Alkalinity, Carbonate (mg/L)	Alkalinity, Bicarbonate (mg/L)	Bromide (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	(umho/cm)	(mg/L)
Coleman Junction					--	861	--	36,524	--	4,676	2,033	942	--	22,000	--	65,080
Concentration (meq/L)						14		1030		97	101	78		957		2,278
%TDS						1		45		4	4	3		42		
Equivalent Weight					30.004	61.016	79.904	35.453	62.004	48.03	20.04	12.1525	39.098	22.9898		
Milliequivalent Weight					0.03332889	0.016389144	0.012515	0.028206	0.016128	0.02082	0.0499	0.0822876	0.0255768	0.0435		

-- = Not Analyzed

$$meq/L = \frac{mg/L}{\text{Equivalent Wt}} \qquad \%TDS = \frac{meq/L}{TDS} \times 100$$

Table 9
Oil and Gas Well Data
Ballinger Seep
Runnels County, Texas

Terracon ID No.	API No.	Well No.	District	County	Field Name	Field No.	Lease Name	Lease No.	Well Status	Spud Date	Completion Date	P&A Date	Total Depth (Feet)	Operator	Operator No.
1	399-03755	1	7C	Runnels	Wildcat	--	Willingham, C.H.	--	Dry Hole	6/8/1935	9/7/1935	8/28/1998	3500	M.H. Wolverton	21536
2	399-30238	3	7C	Runnels	Ballinger South (Capps Oil)	05315 550	Barr, Johnnie H.	6760	Plugged Oil	3/4/1973 9/4/1982	3/24/1973 9/28/1982	3/25/73 6/16/1987 8/11/1998 (re-plug)	3975 4100 3690	H&R Oils/Lone Star Producing H&R Oils, Inc.	341500
3	399-02543	1	7C	Runnels	Ballinger South (Capps Lime)	05315 500	Barr Gas Unit	18657	Plugged Oil/Gas	11/24/1956	12/20/1956	8/1/1966	4657	Pan American Petroleum Corp.	52010/637650
4	399-32642	4	7C	Runnels	Ballinger South (Capps Oil)	05315 550	Barr, Johnnie H.	6760	Dry Hole	12/5/1983	2/3/1983	11/16/1984	4225	H&R Oils, Inc.	341500
5	--	1	7C	Runnels	Wildcat	--	Barr, J. W.	--	Dry Hole	2/6/1964	2/24/1964	2/24/1964	4215	Humble Oil & Refining	52015
6	399-30219	1	7C	Runnels	Wildcat	--	Mays, Gene	--	Dry Hole	10/14/1972	10/24/1972	10/24/1972	3960	H&R Oils, Inc.	341500
7	399-31589	2A	7C	Runnels	Ballinger South (Capps Lime)	05315 500	Gottschalk, Otto	9687	Oil (Plugged)	1/17/1981	1/27/1981	8/22/1983	4150	H&R Oils, Inc.	341500
8	399-32102	1	7C	Runnels	Ballinger South (Capps Oil)	05315 550	City of Ballinger	9530	Plugged Oil	8/6/1981	8/16/1981	10/30/1986	4130	H&R Oils, Inc.	341500
9	399-31590	2	7C	Runnels	Ballinger South (Capps Oil)	05315 550	Barr, Johnnie H.	6760	Plugged Oil	2/14/1981	2/24/1981	6/8/1987	4200	H&R Oils, Inc.	341500
10	399-30292	1	7C	Runnels	Ballinger South (Capps Oil)	05315 550	Barr, Johnnie H.	6760	Plugged Oil	1/20/1974	2/5/1974	6/16/1987	4100	H&R Oils, Inc.	341500
11	399-32325	1	7C	Runnels	Ballinger (Cross Cut Sand)	05310 270	City of Ballinger	9376	Oil (Plugged)	12/16/1981	12/25/1981	2/15/1989	3960	Dennis & Broun	215526
12	399-33391	1	7C	Runnels	Ballinger West (Capps)	05318 250	City of Ballinger	11422	Plugged Oil	12/28/1984	1/4/1985	2/7/1991	3450	Dennis, L.W. & Associates, Inc. M-G Gas Company, Inc.	215625
13	399-30342	1	7C	Runnels	Ballinger South (Capps Oil)	05315 550	Murphy, H.S.	6653	Plugged Oil	3/10/1975	3/21/1975	8/24/1983	4160	H&R Oils, Inc.	341500
14	399-31257	1	7C	Runnels	Wildcat	00016 001	City of Ballinger	--	Dry Hole	9/15/1978	9/26/1978	2/22/79 4/24/80	3950	Loika, E.J.	506063
15	399-34542	2	7C	Runnels	Ballinger South (Capps Lime)	05315 500	Gordon	15663	--	--	--	--	--	Ladd Oil & Gas Corp.	--
	399-34483	1			Wildcat	--	Euhus	14493	Dry Hole	9/25/1997	10/2/1997	10/3/1997	3804	Ladd Oil & Gas Corp.	480951
	--	--			Ballinger South (Capps Lime)	05315 500	Euhus	--	--	--	2/10/2005	--	4000	Ladd Oil & Gas Corp.	480956
16	399-80636	1	7C	Runnels	Ballinger South (Capps Oil)	05315 550	Doose, Arthur	7147	Plugged Oil	4/7/1976	4/23/1976	6/8/1977	4150	H&R Oils, Inc.	341500
17		1	7C	Runnels	Wildcat	--	Stephens, Willie		Dry Hole	--	--	2/16/1951	2505	Wilcox	--
18	399-30341	1	7C	Runnels	Ballinger South (Capps Oil)	05315 550	Gottschalk, Otto	6623	Plugged Oil	7/13/1974	7/21/1974	8/18/1983	4100	H&R Oils, Inc.	341500
19	--	1	7C	Runnels	Ballinger South (Capps Lime)	05315 500	Gottschalk, Otto	--	Plugged Gas	3/22/1963	4/14/1963	12/20/1965	3930	Wade W. White	--

-- = Information not identified during records review.

Terracon

APPENDIX D

Laboratory Data Sheets (July-August 2008)

DHL ANALYTICAL

July 25, 2008

Max Majesko
Terracon, Inc.
8901 Carpenter Fwy #100
Dallas, Texas 75247

TEL: (214) 630-1010
FAX: (614) 630-7070

Order No.: 0807056

RE: Ballinger Seep

Dear Max Majesko:

DHL Analytical received 6 sample(s) on 7/9/2008 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative and all estimated uncertainties of results are within method specifications.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-08A-TX

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#0807056

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Dallas TX
214 630-1010
Project Manager: MAX MAJESKO

Laboratory: DHL
Address: 2300 Double Creek
Round Rock, TX
Contact: John
Phone: 512 388-8222
PO/SO #:

Lab use only
Due Date:

Temp. of coolers when received (C°): 2.4

Page 1 of 1

Sampler's Name: Tracy Watkins
Sampler's Signature: Tracy Watkins

Proj. No.: 94057272B
Project Name: Ballinger Seep
No/Type of Containers

ANALYSIS REQUESTED

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	TDS 160.1	Sodium 6020	Potassium 6020	Magnesium 6020	Calcium 6020	Chloride 300.0	Sulfate/Nitrate 300.0	Bromide 300.0	Carbonate Alkalinity 310.1	Bicarbonate Alkalinity 310.1	Conductivity 120.1	Lab Sample ID (Lab Use Only)
01 W	7/8/8	10:30		✓	MW-5						2	X	X	X	X	X	X	X	X	X	X	X	
02 W	7/8/8	12:35		✓	MW-9						1	X	X	X	X	X	X	X	X	X	X	X	
03 W	7/8/8	13:35		✓	MW-7						1	X	X	X	X	X	X	X	X	X	X	X	
04 W	7/8/8	14:40		✓	MW-3						2	X	X	X	X	X	X	X	X	X	X	X	
05 W	7/8/8	15:25		✓	MW-1						1	X	X	X	X	X	X	X	X	X	X	X	
W	7/8/8	15:35		✓	MW-1 MS						2	X	X	X	X	X	X	X	X	X	X	X	
W	7/8/8	15:45		✓	MW-1 MSD						1	X	X	X	X	X	X	X	X	X	X	X	
W	7/8/8			✓	MW-Duplicate						2	X	X	X	X	X	X	X	X	X	X	X	

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date	Time	Received by: (Signature)	Date	Time
Tracy Watkins	7/8/8		Fed Ex	7/8/08	
Fed Ex	7/9/08	9:30	[illegible]	7/9/08	9:30
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES: THERM # 57

Custody seals present

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

Houston Office
11555 Clay Road, Suite 100
Houston, Texas 77043
(713) 690-8989 Fax (713) 690-8787

Dallas Office
8901 Carpenter Freeway, Suite 100
Dallas, Texas 75247
(214) 630-1010 Fax (214) 630-7070

Fort Worth Office
2601 Gravel Drive
Fort Worth, Texas 76118
(817) 268-8600 Fax (817) 268-8602

Austin Office
5307 Industrial Oaks Blvd. # 160
Austin, Texas 78735
(512) 442-1122 Fax (512) 442-1181

Midland Office
24 Smith Rd., # 261
Midland, Texas 79705
(432) 684-9600 Fax (432) 684-9608

DHL Analytical

Sample Receipt Checklist

Client Name **Terracon, Inc.** Date Received: **7/9/2008**

Work Order Number **0807056** Received by **JB**

Checklist completed by: _____ 7/9/08 Reviewed by (DL) 7/9/08
Signature Date Initials Date

Carrier name: FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Adjusted? NO Checked by _____

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

DHL Analytical

Date: 07/25/08

CLIENT:	Terracon, Inc.
Project:	Ballinger Seep
Lab Order:	0807056

CASE NARRATIVE

The samples were analyzed using the methods outlined in the following references:

Method SW6020 - Trace Metals: ICP-MS - Water
Method M2320 B - Alkalinity
Method E300 - Anions by IC method - Water
Method M2510B - Specific Conductance
Method M2540C - Total Dissolved Solids

All method blanks, laboratory spikes, and matrix spikes met quality assurance objectives, except where noted in the following.

For Trace Metals Analysis, the recoveries of the Matrix Spike and Matrix Spike Duplicate (0807056-05 MS/MSD) were below the control limits for Magnesium, Calcium and Sodium. These were flagged accordingly in the enclosed QC summary report. The LCS was within control limits for these analytes. The reference sample selected for this MS/MSD was from this work order. No further corrective actions were taken.

For Total Suspended Solids Analysis, the RPD of the Sample Duplicate (0807064-10 DUP) was above the control limit. This was flagged accordingly in the enclosed QC summary report. The LCS was within control limits for this parameter. The reference sample selected for this Sample Duplicate was not from this work order. No further corrective actions were taken.

DHL Analytical

Date: 07/25/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-5
Project:	Ballinger Seep	Lab ID:	0807056-01
Project No:	94057272B	Collection Date:	07/08/08 10:30 AM
Lab Order:	0807056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	1830000	100000	100000		µg/L	1000	07/18/08 03:42 PM
Magnesium	980000	50000	50000		µg/L	500	07/14/08 07:17 PM
Potassium	53800	1000	1000		µg/L	10	07/14/08 07:50 PM
Sodium	7620000	100000	100000		µg/L	1000	07/18/08 03:42 PM
Anions by IC method - Water		E300					Analyst: AD
Bromide	39.8	15.0	50.0	J	mg/L	50	07/09/08 09:06 PM
Chloride	18400	300	1000		mg/L	1000	07/21/08 10:09 AM
Nitrate-N	2.67	0.200	1.00		mg/L	2	07/09/08 02:41 PM
Sulfate	1310	50.0	150		mg/L	50	07/09/08 09:06 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	263	10.0	20.0		mg/L	1	07/11/08 08:26 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 08:26 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 08:26 AM
Alkalinity, Total (As CaCO3)	263	10.0	20.0		mg/L	1	07/11/08 08:26 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	56600	50.0	50.0		µmhos/cm	5	07/11/08 03:15 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	39100	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

DHL Analytical

Date: 07/25/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-9
Project:	Ballinger Seep	Lab ID:	0807056-02
Project No:	94057272B	Collection Date:	07/08/08 12:35 PM
Lab Order:	0807056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	1310000	100000	100000		µg/L	1000	07/18/08 03:47 PM
Magnesium	561000	20000	20000		µg/L	200	07/14/08 07:23 PM
Potassium	22100	500	500		µg/L	5	07/14/08 08:40 PM
Sodium	1810000	100000	100000		µg/L	1000	07/18/08 03:47 PM
Anions by IC method - Water		E300					Analyst: AD
Bromide	10.0	0.300	1.00		mg/L	1	07/09/08 01:28 PM
Chloride	6540	300	1000		mg/L	1000	07/21/08 10:25 AM
Nitrate-N	0.140	0.100	0.500	J	mg/L	1	07/09/08 01:28 PM
Sulfate	1690	20.0	60.0		mg/L	20	07/09/08 09:21 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	245	10.0	20.0		mg/L	1	07/11/08 08:35 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 08:35 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 08:35 AM
Alkalinity, Total (As CaCO3)	245	10.0	20.0		mg/L	1	07/11/08 08:35 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	23600	50.0	50.0		µmhos/cm	5	07/11/08 03:15 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	15700	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

DHL Analytical

Date: 07/25/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-7
Project:	Ballinger Seep	Lab ID:	0807056-03
Project No:	94057272B	Collection Date:	07/08/08 01:35 PM
Lab Order:	0807056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	1450000	100000	100000		µg/L	1000	07/18/08 03:53 PM
Magnesium	652000	20000	20000		µg/L	200	07/14/08 07:28 PM
Potassium	14500	500	500		µg/L	5	07/14/08 08:45 PM
Sodium	1520000	100000	100000		µg/L	1000	07/18/08 03:53 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Bromide	10.1	0.300	1.00		mg/L	1	07/09/08 01:43 PM
Chloride	6140	300	1000		mg/L	1000	07/21/08 10:43 AM
Nitrate-N	ND	0.100	0.500		mg/L	1	07/09/08 01:43 PM
Sulfate	1520	20.0	60.0		mg/L	20	07/09/08 09:37 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	257	10.0	20.0		mg/L	1	07/11/08 08:44 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 08:44 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 08:44 AM
Alkalinity, Total (As CaCO3)	257	10.0	20.0		mg/L	1	07/11/08 08:44 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	21800	50.0	50.0		µmhos/cm	5	07/11/08 03:15 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	16400	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 07/25/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-3
Project:	Ballinger Seep	Lab ID:	0807056-04
Project No:	94057272B	Collection Date:	07/08/08 02:40 PM
Lab Order:	0807056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	1720000	100000	100000		µg/L	1000	07/18/08 03:58 PM
Magnesium	487000	10000	10000		µg/L	100	07/14/08 07:34 PM
Potassium	17200	500	500		µg/L	5	07/14/08 08:51 PM
Sodium	8890000	100000	100000		µg/L	1000	07/18/08 03:58 PM
Anions by IC method - Water		E300					Analyst: AD
Bromide	38.9	15.0	50.0	J	mg/L	50	07/09/08 09:53 PM
Chloride	18200	300	1000		mg/L	1000	07/21/08 10:58 AM
Nitrate-N	ND	0.200	1.00		mg/L	2	07/09/08 03:40 PM
Sulfate	1790	50.0	150		mg/L	50	07/09/08 09:53 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	265	10.0	20.0		mg/L	1	07/11/08 08:54 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 08:54 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 08:54 AM
Alkalinity, Total (As CaCO3)	265	10.0	20.0		mg/L	1	07/11/08 08:54 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	56800	50.0	50.0		µmhos/cm	5	07/11/08 03:15 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	37600	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 07/25/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-1
Project:	Ballinger Seep	Lab ID:	0807056-05
Project No:	94057272B	Collection Date:	07/08/08 03:25 PM
Lab Order:	0807056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	512000	100000	100000		µg/L	1000	07/24/08 12:45 PM
Magnesium	132000	2000	2000		µg/L	20	07/14/08 05:34 PM
Potassium	10600	2000	2000		µg/L	20	07/14/08 05:34 PM
Sodium	1500000	100000	100000		µg/L	1000	07/24/08 12:45 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Bromide	12.7	0.300	1.00		mg/L	1	07/09/08 02:12 PM
Chloride	3020	30.0	100		mg/L	100	07/21/08 11:14 AM
Nitrate-N	2.92	0.100	0.500		mg/L	1	07/09/08 02:12 PM
Sulfate	876	20.0	60.0		mg/L	20	07/09/08 10:09 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	320	10.0	20.0		mg/L	1	07/11/08 09:03 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 09:03 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 09:03 AM
Alkalinity, Total (As CaCO3)	320	10.0	20.0		mg/L	1	07/11/08 09:03 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	10400	10.0	10.0		µmhos/cm	1	07/11/08 03:15 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	7080	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

DHL Analytical

Date: 07/25/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-DUPLICATE
Project:	Ballinger Seep	Lab ID:	0807056-06
Project No:	94057272B	Collection Date:	07/08/08
Lab Order:	0807056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	1920000	100000	100000		µg/L	1000	07/18/08 04:09 PM
Magnesium	1000000	100000	100000		µg/L	1000	07/15/08 02:06 PM
Potassium	55100	10000	10000		µg/L	100	07/14/08 07:45 PM
Sodium	7850000	100000	100000		µg/L	1000	07/18/08 04:09 PM
Anions by IC method - Water		E300					Analyst: AD
Bromide	41.6	15.0	50.0	J	mg/L	50	07/09/08 10:24 PM
Chloride	19800	300	1000		mg/L	1000	07/21/08 11:30 AM
Nitrate-N	2.16	0.200	1.00		mg/L	2	07/09/08 05:03 PM
Sulfate	1360	50.0	150		mg/L	50	07/09/08 10:24 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	264	10.0	20.0		mg/L	1	07/11/08 09:29 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 09:29 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 09:29 AM
Alkalinity, Total (As CaCO3)	264	10.0	20.0		mg/L	1	07/11/08 09:29 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	56300	50.0	50.0		µmhos/cm	5	07/11/08 03:15 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	38800	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

CLIENT: Terracon, Inc.
Work Order: 0807056
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS2_080710B

Sample ID:	MB-30919	Batch ID:	30919		TestNo:		SW6020		Units:		µg/L
SampType:	MBLK	Run ID:	ICP-MS2_080710B		Analysis Date:		07/10/08 07:54 PM		Prep Date:		07/10/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Magnesium		ND	100								

Sample ID:	LCS-30919	Batch ID:	30919		TestNo:		SW6020		Units:		µg/L
SampType:	LCS	Run ID:	ICP-MS2_080710B		Analysis Date:		07/10/08 08:00 PM		Prep Date:		07/10/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4680	100	5000	0	93.6	80	120			
Magnesium		4600	100	5000	0	91.9	80	120			
Potassium		4670	100	5000	0	93.5	80	120			
Sodium		4710	100	5000	0	94.1	80	120			

Sample ID:	LCSD-30919	Batch ID:	30919		TestNo:		SW6020		Units:		µg/L
SampType:	LCSD	Run ID:	ICP-MS2_080710B		Analysis Date:		07/10/08 08:05 PM		Prep Date:		07/10/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4710	100	5000	0	94.2	80	120	0.554	15	
Magnesium		4600	100	5000	0	92.0	80	120	0.0435	15	
Potassium		4690	100	5000	0	93.8	80	120	0.406	15	
Sodium		4710	100	5000	0	94.1	80	120	0.0212	15	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807056
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS2_080714A

Sample ID:	0807056-05A MS	Batch ID:	30919		TestNo:		SW6020		Units:		µg/L
SampType:	MS	Run ID:	ICP-MS2_080714A		Analysis Date:		07/14/08 05:50 PM		Prep Date:		07/10/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Magnesium		135000	2000	5000	132400	46.4	80	120			S
Potassium		15000	2000	5000	10550	89.5	80	120			

Sample ID:	0807056-05A MSD	Batch ID:	30919		TestNo:		SW6020		Units:		µg/L
SampType:	MSD	Run ID:	ICP-MS2_080714A		Analysis Date:		07/14/08 05:56 PM		Prep Date:		07/10/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Magnesium		135000	2000	5000	132400	49.2	80	120	0.104	15	S
Potassium		15200	2000	5000	10550	92.7	80	120	1.06	15	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807056
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080715A

Sample ID:	MB-30919	Batch ID:	30919		TestNo:		SW6020		Units:		µg/L
SampType:	MBLK	Run ID:	ICP-MS3_080715A		Analysis Date:		07/15/08 01:55 PM		Prep Date:		07/10/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sodium		ND	100								
Sample ID:	0807056-05A MS	Batch ID:	30919		TestNo:		SW6020		Units:		µg/L
SampType:	MS	Run ID:	ICP-MS3_080715A		Analysis Date:		07/15/08 02:32 PM		Prep Date:		07/10/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		507000	20000	5000	515600	-176	80	120			S
Sodium		1370000	20000	5000	1404000	-640	80	120			S
Sample ID:	0807056-05A MSD	Batch ID:	30919		TestNo:		SW6020		Units:		µg/L
SampType:	MSD	Run ID:	ICP-MS3_080715A		Analysis Date:		07/15/08 02:37 PM		Prep Date:		07/10/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		497000	20000	5000	515600	-368	80	120	1.91	15	S
Sodium		1340000	20000	5000	1404000	-1270	80	120	2.32	15	S

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807056
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080709A

Sample ID:	MB-080709	Batch ID:	R38546		TestNo:		E300		Units:	mg/L
SampType:	MBLK	Run ID:	IC_080709A		Analysis Date:		07/09/08 12:28 PM		Prep Date:	07/09/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Bromide		ND	1.00							
Chloride		ND	1.00							
Nitrate-N		ND	0.500							
Sulfate		ND	3.00							

Sample ID:	LCS-080709	Batch ID:	R38546		TestNo:		E300		Units:	mg/L
SampType:	LCS	Run ID:	IC_080709A		Analysis Date:		07/09/08 12:43 PM		Prep Date:	07/09/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Bromide		19.8	1.00	20.00	0	99.0	90	110		
Chloride		9.82	1.00	10.00	0	98.2	90	110		
Nitrate-N		4.94	0.500	5.000	0	98.8	90	110		
Sulfate		29.0	3.00	30.00	0	96.7	90	110		

Sample ID:	LCSD-080709	Batch ID:	R38546		TestNo:		E300		Units:	mg/L
SampType:	LCSD	Run ID:	IC_080709A		Analysis Date:		07/09/08 12:58 PM		Prep Date:	07/09/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Bromide		19.9	1.00	20.00	0	99.6	90	110	0.598	20
Chloride		9.91	1.00	10.00	0	99.1	90	110	0.879	20
Nitrate-N		4.92	0.500	5.000	0	98.5	90	110	0.328	20
Sulfate		29.3	3.00	30.00	0	97.6	90	110	0.915	20

Sample ID:	0807056-04BMS	Batch ID:	R38546		TestNo:		E300		Units:	mg/L
SampType:	MS	Run ID:	IC_080709A		Analysis Date:		07/09/08 08:19 PM		Prep Date:	07/09/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Bromide		20100	1000	20000	0	101	90	110		
Chloride		22300	1000	10000	12220	101	90	110		
Nitrate-N		4990	500	5000	0	99.8	90	110		
Sulfate		30600	3000	30000	1183	98.0	90	110		

Sample ID:	0807056-04BMSD	Batch ID:	R38546		TestNo:		E300		Units:	mg/L
SampType:	MSD	Run ID:	IC_080709A		Analysis Date:		07/09/08 08:34 PM		Prep Date:	07/09/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Bromide		19700	1000	20000	0	98.3	90	110	2.40	20
Chloride		21800	1000	10000	12220	95.4	90	110	2.37	20
Nitrate-N		4850	500	5000	0	97.1	90	110	2.80	20
Sulfate		30000	3000	30000	1183	96.2	90	110	1.80	20

Qualifiers:

B	Analyte detected in the associated Method Blank
DF	Dilution Factor
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit
R	RPD outside accepted control limits
RL	Reporting Limit
S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL
N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807056
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080721A

Sample ID:	MB-080721	Batch ID:	R38737		TestNo:	E300			Units:	mg/L	
SampType:	MBLK	Run ID:	IC_080721A		Analysis Date:	07/21/08 09:46 AM			Prep Date:	07/21/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		ND	1.00								
Sulfate		ND	3.00								

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807056
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080711A

Sample ID:	MB-080711	Batch ID:	R38575		TestNo:		M2320 B		Units:	mg/L
SampType:	MBLK	Run ID:	TITRATOR_080711A		Analysis Date:		07/11/08 07:59 AM		Prep Date:	07/11/08
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID:	LCS-080711	Batch ID:	R38575		TestNo:		M2320 B		Units:	mg/L
SampType:	LCS	Run ID:	TITRATOR_080711A		Analysis Date:		07/11/08 08:03 AM		Prep Date:	07/11/08
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	50.6	20.0	50.00	0	101	74	129			

Sample ID:	0807056-05B DUP	Batch ID:	R38575		TestNo:		M2320 B		Units:	mg/L
SampType:	DUP	Run ID:	TITRATOR_080711A		Analysis Date:		07/11/08 09:13 AM		Prep Date:	07/11/08
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	314	20.0	0	319.5				1.59	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	314	20.0	0	319.5				1.59	20	

Sample ID:	0807064-10B DUP	Batch ID:	R38575		TestNo:		M2320 B		Units:	mg/L
SampType:	DUP	Run ID:	TITRATOR_080711A		Analysis Date:		07/11/08 11:45 AM		Prep Date:	07/11/08
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	305	20.0	0	305.9				0.419	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	305	20.0	0	305.9				0.419	20	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807056
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080711B

Sample ID:	MBLK-080711	Batch ID:	CONDW-7/11/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	MBLK	Run ID:	WC_080711B	Analysis Date:	07/11/08 03:15 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		ND	10.0								

Sample ID:	LCS-080711	Batch ID:	CONDW-7/11/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	LCS	Run ID:	WC_080711B	Analysis Date:	07/11/08 03:15 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		1360	10.0	1413	0	96.5	95	105			

Sample ID:	0807056-05B DUP	Batch ID:	CONDW-7/11/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	DUP	Run ID:	WC_080711B	Analysis Date:	07/11/08 03:15 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		10400	10.0	0	10430				0.192	2	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

DHL Analytical

Date: 07/25/08

CLIENT: Terracon, Inc.
Work Order: 0807056
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080711E

Sample ID:	MB-080606	Batch ID:	TDS_W-07/11/08	TestNo:	M2540C			Units:	mg/L		
SampType:	MBLK	Run ID:	WC_080711E	Analysis Date:	07/11/08 04:30 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		ND	10.0								
Sample ID:	LCS-080711	Batch ID:	TDS_W-07/11/08	TestNo:	M2540C			Units:	mg/L		
SampType:	LCS	Run ID:	WC_080711E	Analysis Date:	07/11/08 04:30 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		755	10.0	745.6	0	101	90	113			
Sample ID:	0807064-04B DUP	Batch ID:	TDS_W-07/11/08	TestNo:	M2540C			Units:	mg/L		
SampType:	DUP	Run ID:	WC_080711E	Analysis Date:	07/11/08 04:30 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		11200	10.0	0	11740				4.35	5	
Sample ID:	0807064-10B DUP	Batch ID:	TDS_W-07/11/08	TestNo:	M2540C			Units:	mg/L		
SampType:	DUP	Run ID:	WC_080711E	Analysis Date:	07/11/08 04:30 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		4960	10.0	0	5435				9.24	5	R

Qualifiers:

B	Analyte detected in the associated Method Blank
DF	Dilution Factor
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit
R	RPD outside accepted control limits
RL	Reporting Limit
S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL
N	Parameter not NELAC certified

DHL ANALYTICAL

July 23, 2008

Max Majesko
Terracon, Inc.
8901 Carpenter Fwy #100
Dallas, Texas 75247

TEL: (214) 630-1010
FAX: (614) 630-7070

Order No.: 0807064

RE: Ballinger Seep

Dear Max Majesko:

DHL Analytical received 10 sample(s) on 7/10/2008 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative and all estimated uncertainties of results are within method specifications.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-08A-TX

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#0807064

ENVIRONMENTAL, GEOTECHNICAL AND CONSTRUCTION MATERIALS SERVICES

CHAIN OF CUSTODY RECORD

Terracon
Consulting Engineers & Scientists

Office Location: Dallas TX
214 630-1010
Project Manager: MAX MAJESKO

Laboratory: DHL
Address: 2300 Double Creek
Round Rock, TX
Contact: John
Phone: 512 388-8222
PO/SO #:

Lab use only #57
Due Date:
Custody seals on cont
Temp. of coolers when received (C°): 2.0°
1 | 2 | 3 | 4 | 5
Page 1 of 1

Sampler's Name: Tracy WATKINS
Sampler's Signature: Tracy Watkins

Proj. No.: 94057272B
Project Name: BALLINGER SEEP
No/Type of Containers

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	P/O	TDS 160.1	Sodium 6020	Potassium 6020	Magnesium 6020	Calcium 6020	Chloride 300.0	Sulfate 300.0	Bromide/Nitrate 300.0	Carbonate Alkalinity 310.1	Bicarbonate Alkalinity 310.1	Conductivity 120.1	Lab Sample ID (Lab Use Only)
01 W	7/9/8	7:30		✓	SW-Trib-1						2	X	X	X	X	X	X	X	X	X	X	X	
02 W	7/9/8	8:20		✓	PVC-1						2	X	X	X	X	X	X	X	X	X	X	X	
03 W	7/9/8	9:30		✓	MW-2						2	X	X	X	X	X	X	X	X	X	X	X	
04 W	7/9/8	10:20		✓	MW-4						2	X	X	X	X	X	X	X	X	X	X	X	
05 W	7/9/8	11:10		✓	CR-50' up						2	X	X	X	X	X	X	X	X	X	X	X	
06 W	7/9/8	10:45		✓	CR-50' down						2	X	X	X	X	X	X	X	X	X	X	X	
07 W	7/9/8	12:15		✓	MW-16						2	X	X	X	X	X	X	X	X	X	X	X	
08 W	7/9/8	13:25		✓	MW-8						2	X	X	X	X	X	X	X	X	X	X	X	
09 W	7/9/8	12:45		✓	Equip Blank						2	X	X	X	X	X	X	X	X	X	X	X	
10 W	7/9/8			✓	SW Duplicate						2	X	X	X	X	X	X	X	X	X	X	X	

Turn around time: ☒ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Tracy Watkins	7/9/8		Fed ex	7/9/08	10:00
Relinquished by (Signature) Fed ex	Date: 7/10/08	Time: 10:00	Received by: (Signature)	Date: 7/10/08	Time: 10:00
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil
Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

Houston Office
11555 Clay Road, Suite 100
Houston, Texas 77043
(713) 690-8989 Fax (713) 690-8787

Dallas Office
8901 Carpenter Freeway, Suite 100
Dallas, Texas 75247
(214) 630-1010 Fax (214) 630-7070

Fort Worth Office
2601 Gravel Drive
Fort Worth, Texas 76118
(817) 268-8600 Fax (817) 268-8602

Austin Office
5307 Industrial Oaks Blvd. # 160
Austin, Texas 78735
(512) 442-1122 Fax (512) 442-1181

Midland Office
24 Smith Rd., # 261
Midland, Texas 79705
(432) 684-9600 Fax (432) 684-9608

DHL Analytical

Sample Receipt Checklist

Client Name **Terracon, Inc.** Date Received: **7/10/2008**

Work Order Number **0807064** Received by **JB**

Checklist completed by: [signature] 7/10/08 (Signature / Date) Reviewed by (DL) 7/10/08 (Initials / Date)

Carrier name: FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Adjusted? NO Checked by JB

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

DHL Analytical Date: 07/23/08

CLIENT:	Terracon, Inc.
Project:	Ballinger Seep
Lab Order:	0807064

CASE NARRATIVE

The samples were analyzed using the methods outlined in the following references:

Method SW6020 - Trace Metals: ICP-MS - Water
Method M2320 B - Alkalinity
Method E300 - Anions by IC method - Water
Method M2510B - Specific Conductance
Method M2540C - Total Dissolved Solids

All method blanks, laboratory spikes, and matrix spikes met quality assurance objectives, except where noted in the following.

For Trace Metals Analysis, the recoveries of the Matrix Spike and Matrix Spike Duplicate (0807064-01 MS/MSD) were below the control limits for Calcium, Magnesium and Sodium. These were flagged accordingly in the enclosed QC summary report. The LCS was within control limits for these analytes. The reference sample selected for this MS/MSD was from this work order. No further corrective actions were taken.

For Total Dissolved Solids Analysis, the RPD of the Sample Duplicate (0807064-10 DUP) was above the control limit.

DHL Analytical

Date: 07/23/08

CLIENT:	Terracon, Inc.	Client Sample ID:	SW-TRIB-1
Project:	Ballinger Seep	Lab ID:	0807064-01
Project No:	94057272C	Collection Date:	07/09/08 07:30 AM
Lab Order:	0807064	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	371000	20000	20000		µg/L	200	07/15/08 03:23 PM
Magnesium	89500	1000	1000		µg/L	10	07/15/08 05:06 PM
Potassium	10500	1000	1000		µg/L	10	07/15/08 05:06 PM
Sodium	1030000	20000	20000		µg/L	200	07/15/08 03:23 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Bromide	6.22	0.300	1.00		mg/L	1	07/10/08 01:19 PM
Chloride	2240	15.0	50.0		mg/L	50	07/11/08 12:09 PM
Nitrate-N	ND	0.100	0.500		mg/L	1	07/10/08 01:19 PM
Sulfate	631	10.0	30.0		mg/L	10	07/11/08 02:46 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	302	10.0	20.0		mg/L	1	07/11/08 09:36 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 09:36 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 09:36 AM
Alkalinity, Total (As CaCO3)	302	10.0	20.0		mg/L	1	07/11/08 09:36 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	7880	10.0	10.0		µmhos/cm	1	07/11/08 03:35 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	5400	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 07/23/08

CLIENT:	Terracon, Inc.	Client Sample ID:	PVC-1
Project:	Ballinger Seep	Lab ID:	0807064-02
Project No:	94057272C	Collection Date:	07/09/08 08:20 AM
Lab Order:	0807064	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	274000	20000	20000		µg/L	200	07/18/08 06:32 PM
Magnesium	66300	1000	1000		µg/L	10	07/11/08 07:42 PM
Potassium	7090	1000	1000		µg/L	10	07/11/08 07:42 PM
Sodium	1330000	20000	20000		µg/L	200	07/18/08 06:32 PM
Anions by IC method - Water		E300					Analyst: AD
Bromide	12.9	0.300	1.00		mg/L	1	07/10/08 01:35 PM
Chloride	2140	15.0	50.0		mg/L	50	07/21/08 11:45 AM
Nitrate-N	3.50	0.100	0.500		mg/L	1	07/10/08 01:35 PM
Sulfate	858	50.0	150		mg/L	50	07/21/08 11:45 AM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	264	10.0	20.0		mg/L	1	07/11/08 09:45 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 09:45 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 09:45 AM
Alkalinity, Total (As CaCO3)	264	10.0	20.0		mg/L	1	07/11/08 09:45 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	8330	10.0	10.0		µmhos/cm	1	07/11/08 03:35 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	4660	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 07/23/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-2
Project:	Ballinger Seep	Lab ID:	0807064-03
Project No:	94057272C	Collection Date:	07/09/08 09:30 AM
Lab Order:	0807064	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	596000	50000	50000		µg/L	500	07/15/08 04:22 PM
Magnesium	177000	50000	50000		µg/L	500	07/15/08 04:22 PM
Potassium	9900	1000	1000		µg/L	10	07/11/08 07:47 PM
Sodium	1850000	50000	50000		µg/L	500	07/15/08 04:22 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Bromide	34.5	0.300	1.00		mg/L	1	07/10/08 01:50 PM
Chloride	4330	30.0	100		mg/L	100	07/11/08 12:41 PM
Nitrate-N	ND	0.100	0.500		mg/L	1	07/10/08 01:50 PM
Sulfate	816	10.0	30.0		mg/L	10	07/11/08 04:05 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	291	10.0	20.0		mg/L	1	07/11/08 09:54 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 09:54 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 09:54 AM
Alkalinity, Total (As CaCO3)	291	10.0	20.0		mg/L	1	07/11/08 09:54 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	15700	50.0	50.0		µmhos/cm	5	07/11/08 03:35 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	9680	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 07/23/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-4
Project:	Ballinger Seep	Lab ID:	0807064-04
Project No:	94057272C	Collection Date:	07/09/08 10:20 AM
Lab Order:	0807064	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	916000	20000	20000		µg/L	200	07/15/08 04:27 PM
Magnesium	243000	20000	20000		µg/L	200	07/15/08 04:27 PM
Potassium	7400	100	100		µg/L	1	07/15/08 05:17 PM
Sodium	1750000	20000	20000		µg/L	200	07/15/08 04:27 PM
Anions by IC method - Water		E300					Analyst: AD
Bromide	7.40	0.300	1.00		mg/L	1	07/10/08 02:06 PM
Chloride	4680	30.0	100		mg/L	100	07/11/08 12:56 PM
Nitrate-N	ND	0.100	0.500		mg/L	1	07/10/08 02:06 PM
Sulfate	1100	20.0	60.0		mg/L	20	07/11/08 04:20 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	321	10.0	20.0		mg/L	1	07/11/08 10:04 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 10:04 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 10:04 AM
Alkalinity, Total (As CaCO3)	321	10.0	20.0		mg/L	1	07/11/08 10:04 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	17300	50.0	50.0		µmhos/cm	5	07/11/08 03:35 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	11700	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 07/23/08

CLIENT:	Terracon, Inc.	Client Sample ID:	CR-50' up
Project:	Ballinger Seep	Lab ID:	0807064-05
Project No:	94057272C	Collection Date:	07/09/08 11:10 AM
Lab Order:	0807064	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	311000	5000	5000		µg/L	50	07/15/08 04:39 PM
Magnesium	138000	5000	5000		µg/L	50	07/15/08 04:39 PM
Potassium	10100	1000	1000		µg/L	10	07/11/08 07:58 PM
Sodium	400000	5000	5000		µg/L	50	07/15/08 04:39 PM
Anions by IC method - Water		E300					Analyst: AD
Bromide	6.77	0.300	1.00		mg/L	1	07/10/08 02:22 PM
Chloride	793	6.00	20.0		mg/L	20	07/11/08 01:12 PM
Nitrate-N	1.66	0.100	0.500		mg/L	1	07/10/08 02:22 PM
Sulfate	1210	20.0	60.0		mg/L	20	07/11/08 01:12 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	125	10.0	20.0		mg/L	1	07/11/08 10:08 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 10:08 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 10:08 AM
Alkalinity, Total (As CaCO3)	125	10.0	20.0		mg/L	1	07/11/08 10:08 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	4300	10.0	10.0		µmhos/cm	1	07/11/08 03:35 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	3140	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 07/23/08

CLIENT:	Terracon, Inc.	Client Sample ID:	CR-50' down
Project:	Ballinger Seep	Lab ID:	0807064-06
Project No:	94057272C	Collection Date:	07/09/08 10:45 AM
Lab Order:	0807064	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	305000	5000	5000		µg/L	50	07/15/08 04:44 PM
Magnesium	133000	5000	5000		µg/L	50	07/15/08 04:44 PM
Potassium	10100	1000	1000		µg/L	10	07/11/08 08:04 PM
Sodium	391000	5000	5000		µg/L	50	07/15/08 04:44 PM
Anions by IC method - Water		E300					Analyst: AD
Bromide	7.11	0.300	1.00		mg/L	1	07/10/08 02:38 PM
Chloride	787	6.00	20.0		mg/L	20	07/11/08 01:28 PM
Nitrate-N	1.81	0.100	0.500		mg/L	1	07/10/08 02:38 PM
Sulfate	1200	20.0	60.0		mg/L	20	07/11/08 01:28 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	123	10.0	20.0		mg/L	1	07/11/08 10:13 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 10:13 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 10:13 AM
Alkalinity, Total (As CaCO3)	123	10.0	20.0		mg/L	1	07/11/08 10:13 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	4290	10.0	10.0		µmhos/cm	1	07/11/08 03:35 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	3220	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 07/23/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-16
Project:	Ballinger Seep	Lab ID:	0807064-07
Project No:	94057272C	Collection Date:	07/09/08 12:15 PM
Lab Order:	0807064	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	1630000	50000	50000		µg/L	500	07/18/08 06:37 PM
Magnesium	623000	50000	50000		µg/L	500	07/15/08 04:50 PM
Potassium	11000	1000	1000		µg/L	10	07/11/08 08:09 PM
Sodium	2910000	50000	50000		µg/L	500	07/18/08 06:37 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Bromide	6.37	0.300	1.00		mg/L	1	07/10/08 05:28 PM
Chloride	8630	60.0	200		mg/L	200	07/21/08 12:01 PM
Nitrate-N	ND	0.100	0.500		mg/L	1	07/10/08 05:28 PM
Sulfate	1500	200	600		mg/L	200	07/21/08 12:01 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	264	10.0	20.0		mg/L	1	07/11/08 11:12 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 11:12 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 11:12 AM
Alkalinity, Total (As CaCO3)	264	10.0	20.0		mg/L	1	07/11/08 11:12 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	30000	50.0	50.0		µmhos/cm	5	07/11/08 03:35 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	21100	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

DHL Analytical

Date: 07/23/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-8
Project:	Ballinger Seep	Lab ID:	0807064-08
Project No:	94057272C	Collection Date:	07/09/08 01:25 PM
Lab Order:	0807064	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	374000	10000	10000		µg/L	100	07/15/08 04:55 PM
Magnesium	130000	10000	10000		µg/L	100	07/15/08 04:55 PM
Potassium	5000	100	100		µg/L	1	07/15/08 05:11 PM
Sodium	742000	10000	10000		µg/L	100	07/15/08 04:55 PM
Anions by IC method - Water		E300					Analyst: AD
Bromide	11.0	0.300	1.00		mg/L	1	07/10/08 05:12 PM
Chloride	1930	15.0	50.0		mg/L	50	07/11/08 01:59 PM
Nitrate-N	1.55	0.100	0.500		mg/L	1	07/10/08 05:12 PM
Sulfate	409	5.00	15.0		mg/L	5	07/11/08 04:52 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	410	10.0	20.0		mg/L	1	07/11/08 11:23 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 11:23 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 11:23 AM
Alkalinity, Total (As CaCO3)	410	10.0	20.0		mg/L	1	07/11/08 11:23 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	6820	10.0	10.0		µmhos/cm	1	07/11/08 03:35 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	4800	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 07/23/08

CLIENT:	Terracon, Inc.	Client Sample ID:	Equip Blank
Project:	Ballinger Seep	Lab ID:	0807064-09
Project No:	94057272C	Collection Date:	07/09/08 12:45 PM
Lab Order:	0807064	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	ND	100	100		µg/L	1	07/15/08 03:07 PM
Magnesium	ND	100	100		µg/L	1	07/15/08 03:07 PM
Potassium	ND	100	100		µg/L	1	07/15/08 03:07 PM
Sodium	4400	100	100		µg/L	1	07/15/08 03:07 PM
Anions by IC method - Water		E300					Analyst: AD
Bromide	ND	0.300	1.00		mg/L	1	07/10/08 04:57 PM
Chloride	ND	0.300	1.00		mg/L	1	07/10/08 04:57 PM
Nitrate-N	ND	0.100	0.500		mg/L	1	07/10/08 04:57 PM
Sulfate	ND	1.00	3.00		mg/L	1	07/10/08 04:57 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 11:25 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 11:25 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 11:25 AM
Alkalinity, Total (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 11:25 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	11.8	10.0	10.0		µmhos/cm	1	07/11/08 03:35 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	23.0	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 07/23/08

CLIENT:	Terracon, Inc.	Client Sample ID:	SW Duplicate
Project:	Ballinger Seep	Lab ID:	0807064-10
Project No:	94057272C	Collection Date:	07/09/08
Lab Order:	0807064	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	363000	20000	20000		µg/L	200	07/15/08 05:01 PM
Magnesium	92100	1000	1000		µg/L	10	07/11/08 08:25 PM
Potassium	10200	1000	1000		µg/L	10	07/11/08 08:25 PM
Sodium	1020000	20000	20000		µg/L	200	07/15/08 05:01 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Bromide	5.49	3.00	10.0	J	mg/L	10	07/11/08 05:08 PM
Chloride	2210	15.0	50.0		mg/L	50	07/11/08 02:15 PM
Nitrate-N	ND	1.00	5.00		mg/L	10	07/11/08 05:08 PM
Sulfate	633	10.0	30.0		mg/L	10	07/11/08 05:08 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	306	10.0	20.0		mg/L	1	07/11/08 11:38 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 11:38 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	07/11/08 11:38 AM
Alkalinity, Total (As CaCO3)	306	10.0	20.0		mg/L	1	07/11/08 11:38 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	7970	10.0	10.0		µmhos/cm	1	07/11/08 03:35 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	5440	10.0	10.0		mg/L	1	07/11/08 04:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: Terracon, Inc.
Work Order: 0807064
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS2_080711B

Sample ID:	MB-30931	Batch ID:	30931		TestNo:		SW6020		Units:		µg/L
SampType:	MBLK	Run ID:	ICP-MS2_080711B		Analysis Date:		07/11/08 06:11 PM		Prep Date:		07/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		ND	100								
Magnesium		ND	100								
Potassium		ND	100								

Sample ID:	LCS-30931	Batch ID:	30931		TestNo:		SW6020		Units:		µg/L
SampType:	LCS	Run ID:	ICP-MS2_080711B		Analysis Date:		07/11/08 06:22 PM		Prep Date:		07/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4760	100	5000	0	95.3	80	120			
Magnesium		4550	100	5000	0	90.9	80	120			
Potassium		4940	100	5000	0	98.9	80	120			

Sample ID:	LCSD-30931	Batch ID:	30931		TestNo:		SW6020		Units:		µg/L
SampType:	LCSD	Run ID:	ICP-MS2_080711B		Analysis Date:		07/11/08 06:27 PM		Prep Date:		07/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4870	100	5000	0	97.4	80	120	2.26	15	
Magnesium		4610	100	5000	0	92.1	80	120	1.29	15	
Potassium		4990	100	5000	0	99.8	80	120	0.926	15	

Sample ID:	0807064-01A MS	Batch ID:	30931		TestNo:		SW6020		Units:		µg/L
SampType:	MS	Run ID:	ICP-MS2_080711B		Analysis Date:		07/11/08 06:54 PM		Prep Date:		07/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		346000	100	5000	353400	-140	80	120			S
Magnesium		84400	100	5000	86010	-32.6	80	120			S
Potassium		15000	100	5000	10810	83.8	80	120			

Sample ID:	0807064-01A MSD	Batch ID:	30931		TestNo:		SW6020		Units:		µg/L
SampType:	MSD	Run ID:	ICP-MS2_080711B		Analysis Date:		07/11/08 06:59 PM		Prep Date:		07/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		348000	100	5000	353400	-112	80	120	0.403	15	S
Magnesium		87600	100	5000	86010	32.6	80	120	3.79	15	S
Potassium		15600	100	5000	10810	96.4	80	120	4.11	15	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807064
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080715A

Sample ID:	MB-30931	Batch ID:	30931	TestNo:		SW6020		Units:		µg/L	
SampType:	MBLK	Run ID:	ICP-MS3_080715A	Analysis Date:		07/15/08 03:02 PM		Prep Date:		07/11/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sodium		ND	100								
Sample ID:	LCS-30931	Batch ID:	30931	TestNo:		SW6020		Units:		µg/L	
SampType:	LCS	Run ID:	ICP-MS3_080715A	Analysis Date:		07/15/08 03:12 PM		Prep Date:		07/11/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sodium		4680	100	5000	0	93.5	80	120			
Sample ID:	LCSD-30931	Batch ID:	30931	TestNo:		SW6020		Units:		µg/L	
SampType:	LCSD	Run ID:	ICP-MS3_080715A	Analysis Date:		07/15/08 03:18 PM		Prep Date:		07/11/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sodium		4600	100	5000	0	92.0	80	120	1.62	15	
Sample ID:	0807064-01A MS	Batch ID:	30931	TestNo:		SW6020		Units:		µg/L	
SampType:	MS	Run ID:	ICP-MS3_080715A	Analysis Date:		07/15/08 03:38 PM		Prep Date:		07/11/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sodium		1020000	20000	5000	1027000	-240	80	120			S
Sample ID:	0807064-01A MSD	Batch ID:	30931	TestNo:		SW6020		Units:		µg/L	
SampType:	MSD	Run ID:	ICP-MS3_080715A	Analysis Date:		07/15/08 03:44 PM		Prep Date:		07/11/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sodium		1020000	20000	5000	1027000	-164	80	120	0.374	15	S

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807064
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080710A

Sample ID:	MB-080710	Batch ID:	R38589		TestNo:		E300		Units:		mg/L
SampType:	MBLK	Run ID:	IC_080710A		Analysis Date:		07/10/08 12:09 PM		Prep Date:		07/10/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		ND	1.00								
Chloride		ND	1.00								
Nitrate-N		ND	0.500								
Sulfate		ND	3.00								

Sample ID:	LCS-080710	Batch ID:	R38589		TestNo:		E300		Units:		mg/L
SampType:	LCS	Run ID:	IC_080710A		Analysis Date:		07/10/08 12:25 PM		Prep Date:		07/10/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		20.4	1.00	20.00	0	102	90	110			
Chloride		9.88	1.00	10.00	0	98.8	90	110			
Nitrate-N		5.09	0.500	5.000	0	102	90	110			
Sulfate		29.2	3.00	30.00	0	97.4	90	110			

Sample ID:	LCSD-080710	Batch ID:	R38589		TestNo:		E300		Units:		mg/L
SampType:	LCSD	Run ID:	IC_080710A		Analysis Date:		07/10/08 12:41 PM		Prep Date:		07/10/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.8	1.00	20.00	0	98.9	90	110	3.05	20	
Chloride		9.76	1.00	10.00	0	97.6	90	110	1.13	20	
Nitrate-N		4.87	0.500	5.000	0	97.3	90	110	4.47	20	
Sulfate		28.9	3.00	30.00	0	96.2	90	110	1.18	20	

Sample ID:	0807064-05BMS	Batch ID:	R38589		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080710A		Analysis Date:		07/11/08 03:33 PM		Prep Date:		07/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		399	20.0	400.0	0	99.7	90	110			
Chloride		676	20.0	200.0	475.6	100	90	110			
Nitrate-N		99.0	10.0	100.0	0	99.0	90	110			
Sulfate		1330	60.0	600.0	724.2	101	90	110			

Sample ID:	0807064-05BMSD	Batch ID:	R38589		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080710A		Analysis Date:		07/11/08 03:49 PM		Prep Date:		07/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		400	20.0	400.0	0	100	90	110	0.324	20	
Chloride		676	20.0	200.0	475.6	100	90	110	0.0124	20	
Nitrate-N		99.2	10.0	100.0	0	99.2	90	110	0.129	20	
Sulfate		1330	60.0	600.0	724.2	100	90	110	0.153	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807064
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080721A

Sample ID:	MB-080721	Batch ID:	R38737		TestNo:	E300			Units:	mg/L	
SampType:	MBLK	Run ID:	IC_080721A		Analysis Date:	07/21/08 09:46 AM			Prep Date:	07/21/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		ND	1.00								
Sulfate		ND	3.00								

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807064
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080711A

Sample ID:	MB-080711	Batch ID:	R38575		TestNo:		M2320 B		Units:	mg/L
SampType:	MBLK	Run ID:	TITRATOR_080711A		Analysis Date:		07/11/08 07:59 AM		Prep Date:	07/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Alkalinity, Bicarbonate (As CaCO3)		ND	20.0							
Alkalinity, Carbonate (As CaCO3)		ND	20.0							
Alkalinity, Hydroxide (As CaCO3)		ND	20.0							
Alkalinity, Total (As CaCO3)		ND	20.0							

Sample ID:	LCS-080711	Batch ID:	R38575		TestNo:		M2320 B		Units:	mg/L
SampType:	LCS	Run ID:	TITRATOR_080711A		Analysis Date:		07/11/08 08:03 AM		Prep Date:	07/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Alkalinity, Total (As CaCO3)		50.6	20.0	50.00	0	101	74	129		

Sample ID:	0807056-05B DUP	Batch ID:	R38575		TestNo:		M2320 B		Units:	mg/L
SampType:	DUP	Run ID:	TITRATOR_080711A		Analysis Date:		07/11/08 09:13 AM		Prep Date:	07/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Alkalinity, Bicarbonate (As CaCO3)		314	20.0	0	319.5				1.59	20
Alkalinity, Carbonate (As CaCO3)		0	20.0	0	0				0	20
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0	0				0	20
Alkalinity, Total (As CaCO3)		314	20.0	0	319.5				1.59	20

Sample ID:	0807064-10B DUP	Batch ID:	R38575		TestNo:		M2320 B		Units:	mg/L
SampType:	DUP	Run ID:	TITRATOR_080711A		Analysis Date:		07/11/08 11:45 AM		Prep Date:	07/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit Qual
Alkalinity, Bicarbonate (As CaCO3)		305	20.0	0	305.9				0.419	20
Alkalinity, Carbonate (As CaCO3)		0	20.0	0	0				0	20
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0	0				0	20
Alkalinity, Total (As CaCO3)		305	20.0	0	305.9				0.419	20

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807064
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080711A

Sample ID:	MBLK-080711	Batch ID:	CONDW-07/11/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	MBLK	Run ID:	WC_080711A	Analysis Date:	07/11/08 03:35 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		ND	10.0								

Sample ID:	LCS-080711	Batch ID:	CONDW-07/11/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	LCS	Run ID:	WC_080711A	Analysis Date:	07/11/08 03:35 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		1370	10.0	1413	0	97.0	95	105			

Sample ID:	0807064-10B DUP	Batch ID:	CONDW-07/11/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	DUP	Run ID:	WC_080711A	Analysis Date:	07/11/08 03:35 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		7960	10.0	0	7970				0.126	2	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0807064
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080711E

Sample ID:	MB-080606	Batch ID:	TDS_W-07/11/08	TestNo:	M2540C			Units:	mg/L		
SampType:	MBLK	Run ID:	WC_080711E	Analysis Date:	07/11/08 04:30 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		ND	10.0								
Sample ID:	LCS-080711	Batch ID:	TDS_W-07/11/08	TestNo:	M2540C			Units:	mg/L		
SampType:	LCS	Run ID:	WC_080711E	Analysis Date:	07/11/08 04:30 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		755	10.0	745.6	0	101	90	113			
Sample ID:	0807064-04B DUP	Batch ID:	TDS_W-07/11/08	TestNo:	M2540C			Units:	mg/L		
SampType:	DUP	Run ID:	WC_080711E	Analysis Date:	07/11/08 04:30 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		11200	10.0	0	11740				4.35	5	
Sample ID:	0807064-10B DUP	Batch ID:	TDS_W-07/11/08	TestNo:	M2540C			Units:	mg/L		
SampType:	DUP	Run ID:	WC_080711E	Analysis Date:	07/11/08 04:30 PM			Prep Date:	07/11/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		4960	10.0	0	5435				9.24	5	R

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

DHL ANALYTICAL

August 11, 2008

Max Majesko
Terracon, Inc.
8901 Carpenter Fwy #100
Dallas, Texas 75247

TEL: (214) 630-1010
FAX: (614) 630-7070

Order No.: 0808041

RE: Ballinger Seep

Dear Max Majesko:

DHL Analytical received 13 sample(s) on 8/6/2008 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative and all estimated uncertainties of results are within method specifications.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-08A-TX

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DHL ANALYTICAL

2300 Double Creek Drive • Round Rock, TX 78664
Phone (512) 388-8222 • FAX (512) 388-8229

№ 37451

CHAIN-OF-CUSTODY

CLIENT: Terracon Consultants
ADDRESS: 8901 John Carpenter Fwy, Dallas, TX
PHONE: 214-630-1010 FAX 214-630-7070
DATA REPORTED TO: Max Majesko
ADDITIONAL REPORT COPIES TO:

DATE: 8/5/08 PAGE ____ OF ____
PO #: 9405727ZB DHL WORK ORDER #: 0808041
PROJECT LOCATION OR NAME: Ballinger
CLIENT PROJECT #: ____ COLLECTOR: Erin Loyd

Authorize 5% surcharge for TRRP report? ☐ Yes ☐ No

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO3	H2SO4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐	TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	Na, Mg, Ca, nitrate, Bromide, Carbonate & Bicarbonate Alkalinity, Conductivity	FIELD NOTES
MW-5	01	8/5/08	7:25	W	500ml	2		X		X														X			X	X	X	X	Acid Sulfate per Max 8/7/08
MW-Dup	02	8/5/08	7:25	W	500	2		X		X														X			X	X	X	X	
MW-7	03	8/5/08	9:10	W	500	2		X		X														X			X	X	X	X	
MW-MS/MSD	03	8/5/08	9:10	W	500	2		X		X														X			X	X	X	X	
SW-CR-SO4 Down	04	8/5/08	9:40	W	500	2		X		X														X			X	X	X	X	
SW-CR-SO4 up	05	8/5/08	9:45	W	500	2		X		X														X			X	X	X	X	
SW-Dup	06	8/5/08	9:45	W	500	2		X		X														X			X	X	X	X	
SW-MS/MSD	04	8/5/08	9:40	W	500	2		X		X														X			X	X	X	X	
MW-8	07	8/5/08	10:30	W	500	2		X		X														X			X	X	X	X	
MW-3	08	8/5/08	10:50	W	500	2		X		X														X			X	X	X	X	
MW-2	09	8/5/08	13:05	W	500	2		X		X														X			X	X	X	X	
MW-1	10	8/5/08	13:40	W	500	2		X		X														X			X	X	X	X	
SW-Trib-1	11	8/5/08	14:10	W	500	2		X		X														X			X	X	X	X	
MW-9	12	8/5/08	15:30	W	500	2		X		X														X			X	X	X	X	
MW-4	13	8/5/08	16:20	W	500	2		X		X														X			X	X	X	X	
TOTAL																															

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME 8/6/08 10:30 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

TURN AROUND TIME
RUSH ☒ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☒ per Max M.
NORMAL ☐ 8/06/08 (5pm)
OTHER ☐ ____

LABORATORY USE ONLY:
RECEIVING TEMP: 1.2° THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☒ CARRIER BILL # Fed ex
☐ APC DELIVERY
☐ HAND DELIVERED

DHL Analytical

Sample Receipt Checklist

Client Name **Terracon, Inc.** Date Received: **8/6/2008**

Work Order Number **0808041** Received by **JB**

Checklist completed by: Signature 8/6/08 Date Reviewed by: Initials 8/6/08 Date

Carrier name: FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Adjusted? NO Checked by JB

Any No response must be detailed in the comments section below.

Client contacted Terracon Date contacted: 8-7-08 Person contacted Max

Contacted by: JBarker Regarding: anions

Comments: Per Max, please add sulfate to the anions for these samples.

Corrective Action Added sulfate to the anions that are being analyzed.

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	CASE NARRATIVE
Project:	Ballinger Seep	
Lab Order:	0808041	

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, E300, M2320 B, M2510 B and M2540C (18th edition).

For Anions analysis sample MW-3 has Nitrate-N reported outside of HoldTime. This was due to instrument failure on 8/7/08 (original analysis). The Nitrate-N result is flagged with a "C" to designate this.

For Anions analysis sample MW-3 was diluted prior to analysis due to the nature of the sample (high chloride content).

All method blanks, duplicates, laboratory spikes, and/or matrix spikes met quality assurance objectives except where noted in the following. For Anions analysis by method E300 the matrix spikes and matrix spike duplicate recoveries were above control limits for Bromide and Chloride. These are flagged accordingly in the enclosed QC summary report. The "S" flag denotes spike recovery was outside control limits. The LCS was within control limits for these analytes. No further corrective actions were taken.

For Metals analysis by method SW6020 (batches 31239 & 31240) the matrix spikes and matrix spike duplicate recoveries were out of control limits for some analytes. These are flagged accordingly. The "S" flag denotes spike recovery was outside control limits. The LCS was within control limits for these analytes. No further corrective actions were taken.

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-7
Project:	Ballinger Seep	Lab ID:	0808041-03
Project No:	94057272B	Collection Date:	08/05/08 09:10 AM
Lab Order:	0808041	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	1350	100	100		mg/L	1000	08/06/08 07:14 PM
Magnesium	603	100	100		mg/L	1000	08/06/08 07:14 PM
Potassium	14.3	1.00	1.00		mg/L	10	08/07/08 07:12 PM
Sodium	1440	100	100		mg/L	1000	08/06/08 07:14 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	9.25	0.300	1.00		mg/L	1	08/07/08 11:26 AM
Chloride	6700	150	500		mg/L	500	08/07/08 05:27 PM
Nitrate-N	0.181	0.100	0.500	J	mg/L	1	08/07/08 11:26 AM
Sulfate	1390	50.0	150		mg/L	50	08/08/08 10:37 AM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	253	10.0	20.0		mg/L	1	08/07/08 08:41 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 08:41 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 08:41 AM
Alkalinity, Total (As CaCO3)	253	10.0	20.0		mg/L	1	08/07/08 08:41 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	22600	50.0	50.0		µmhos/cm	5	08/06/08 02:05 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	15400	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	Client Sample ID:	SW-CR-50'Down
Project:	Ballinger Seep	Lab ID:	0808041-04
Project No:	94057272B	Collection Date:	08/05/08 09:40 AM
Lab Order:	0808041	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	373	10.0	10.0		mg/L	100	08/07/08 01:12 PM
Magnesium	137	10.0	10.0		mg/L	100	08/07/08 01:12 PM
Potassium	6.09	0.100	0.100		mg/L	1	08/07/08 09:32 PM
Sodium	235	10.0	10.0		mg/L	100	08/07/08 01:12 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	1.69	0.300	1.00		mg/L	1	08/07/08 12:13 PM
Chloride	478	6.00	20.0		mg/L	20	08/08/08 11:24 AM
Nitrate-N	1.79	0.100	0.500		mg/L	1	08/07/08 12:13 PM
Sulfate	1540	10.0	30.0		mg/L	10	08/07/08 06:45 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	127	10.0	20.0		mg/L	1	08/07/08 08:45 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 08:45 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 08:45 AM
Alkalinity, Total (As CaCO3)	127	10.0	20.0		mg/L	1	08/07/08 08:45 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	3510	10.0	10.0		µmhos/cm	1	08/06/08 02:05 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	2960	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	Client Sample ID:	SW-CR-50'Up
Project:	Ballinger Seep	Lab ID:	0808041-05
Project No:	94057272B	Collection Date:	08/05/08 09:45 AM
Lab Order:	0808041	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	380	10.0	10.0		mg/L	100	08/07/08 01:39 PM
Magnesium	138	10.0	10.0		mg/L	100	08/07/08 01:39 PM
Potassium	6.08	0.100	0.100		mg/L	1	08/07/08 09:57 PM
Sodium	234	10.0	10.0		mg/L	100	08/07/08 01:39 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	1.68	0.300	1.00		mg/L	1	08/07/08 12:59 PM
Chloride	468	6.00	20.0		mg/L	20	08/07/08 08:20 PM
Nitrate-N	1.79	0.100	0.500		mg/L	1	08/07/08 12:59 PM
Sulfate	1370	20.0	60.0		mg/L	20	08/07/08 08:20 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	127	10.0	20.0		mg/L	1	08/07/08 08:49 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 08:49 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 08:49 AM
Alkalinity, Total (As CaCO3)	127	10.0	20.0		mg/L	1	08/07/08 08:49 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	3530	10.0	10.0		µmhos/cm	1	08/06/08 02:05 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	2970	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	Client Sample ID:	SW-DUP
Project:	Ballinger Seep	Lab ID:	0808041-06
Project No:	94057272B	Collection Date:	08/05/08 09:45 AM
Lab Order:	0808041	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	375	10.0	10.0		mg/L	100	08/07/08 01:44 PM
Magnesium	137	10.0	10.0		mg/L	100	08/07/08 01:44 PM
Potassium	5.94	0.100	0.100		mg/L	1	08/07/08 10:03 PM
Sodium	230	10.0	10.0		mg/L	100	08/07/08 01:44 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	1.69	0.300	1.00		mg/L	1	08/07/08 01:45 PM
Chloride	478	6.00	20.0		mg/L	20	08/07/08 08:35 PM
Nitrate-N	1.79	0.100	0.500		mg/L	1	08/07/08 01:45 PM
Sulfate	1380	20.0	60.0		mg/L	20	08/07/08 08:35 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	128	10.0	20.0		mg/L	1	08/07/08 08:53 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 08:53 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 08:53 AM
Alkalinity, Total (As CaCO3)	128	10.0	20.0		mg/L	1	08/07/08 08:53 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	3540	10.0	10.0		µmhos/cm	1	08/06/08 02:05 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	2960	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-8
Project:	Ballinger Seep	Lab ID:	0808041-07
Project No:	94057272B	Collection Date:	08/05/08 10:30 AM
Lab Order:	0808041	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	358	10.0	10.0		mg/L	100	08/07/08 01:49 PM
Magnesium	129	10.0	10.0		mg/L	100	08/07/08 01:49 PM
Potassium	5.36	0.100	0.100		mg/L	1	08/07/08 10:08 PM
Sodium	702	10.0	10.0		mg/L	100	08/07/08 01:49 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	3.04	0.300	1.00		mg/L	1	08/07/08 02:01 PM
Chloride	1750	30.0	100		mg/L	100	08/07/08 08:51 PM
Nitrate-N	0.208	0.100	0.500	J	mg/L	1	08/07/08 02:01 PM
Sulfate	420	100	300		mg/L	100	08/07/08 08:51 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	401	10.0	20.0		mg/L	1	08/07/08 09:04 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:04 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:04 AM
Alkalinity, Total (As CaCO3)	401	10.0	20.0		mg/L	1	08/07/08 09:04 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	6290	10.0	10.0		µmhos/cm	1	08/06/08 02:05 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	4170	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-3
Project:	Ballinger Seep	Lab ID:	0808041-08
Project No:	94057272B	Collection Date:	08/05/08 10:50 AM
Lab Order:	0808041	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	2180	100	100		mg/L	1000	08/06/08 11:19 PM
Magnesium	622	100	100		mg/L	1000	08/06/08 11:19 PM
Potassium	17.8	0.500	0.500		mg/L	5	08/08/08 01:50 PM
Sodium	8320	100	100		mg/L	1000	08/06/08 11:19 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	32.8	3.00	10.0		mg/L	10	08/08/08 02:16 PM
Chloride	21200	300	1000		mg/L	1000	08/08/08 05:10 PM
Nitrate-N	ND	1.00	5.00	C	mg/L	10	08/08/08 02:16 PM
Sulfate	1750	100	300		mg/L	100	08/08/08 02:30 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	237	10.0	20.0		mg/L	1	08/07/08 09:13 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:13 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:13 AM
Alkalinity, Total (As CaCO3)	237	10.0	20.0		mg/L	1	08/07/08 09:13 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	61700	50.0	50.0		µmhos/cm	5	08/06/08 02:05 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	38000	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-2
Project:	Ballinger Seep	Lab ID:	0808041-09
Project No:	94057272B	Collection Date:	08/05/08 01:05 PM
Lab Order:	0808041	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	588	10.0	10.0		mg/L	100	08/07/08 02:13 PM
Magnesium	162	10.0	10.0		mg/L	100	08/07/08 02:13 PM
Potassium	9.91	0.500	0.500		mg/L	5	08/08/08 01:55 PM
Sodium	1730	100	100		mg/L	1000	08/06/08 11:24 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	6.33	0.300	1.00		mg/L	1	08/07/08 02:32 PM
Chloride	4110	60.0	200		mg/L	200	08/08/08 04:23 PM
Nitrate-N	ND	0.100	0.500		mg/L	1	08/07/08 02:32 PM
Sulfate	786	200	600		mg/L	200	08/08/08 04:23 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	299	10.0	20.0		mg/L	1	08/07/08 09:22 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:22 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:22 AM
Alkalinity, Total (As CaCO3)	299	10.0	20.0		mg/L	1	08/07/08 09:22 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	14600	50.0	50.0		µmhos/cm	5	08/06/08 02:05 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	8970	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-1
Project:	Ballinger Seep	Lab ID:	0808041-10
Project No:	94057272B	Collection Date:	08/05/08 01:40 PM
Lab Order:	0808041	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	521	10.0	10.0		mg/L	100	08/07/08 02:18 PM
Magnesium	135	10.0	10.0		mg/L	100	08/07/08 02:18 PM
Potassium	13.1	10.0	10.0		mg/L	100	08/07/08 02:18 PM
Sodium	1440	100	100		mg/L	1000	08/06/08 11:29 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	8.58	0.300	1.00		mg/L	1	08/07/08 02:48 PM
Chloride	3330	30.0	100		mg/L	100	08/08/08 04:39 PM
Nitrate-N	1.18	0.100	0.500		mg/L	1	08/07/08 02:48 PM
Sulfate	744	100	300		mg/L	100	08/08/08 04:39 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	300	10.0	20.0		mg/L	1	08/07/08 09:30 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:30 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:30 AM
Alkalinity, Total (As CaCO3)	300	10.0	20.0		mg/L	1	08/07/08 09:30 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	11100	10.0	10.0		µmhos/cm	1	08/06/08 02:05 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	7380	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	Client Sample ID:	SW-Trib-1
Project:	Ballinger Seep	Lab ID:	0808041-11
Project No:	94057272B	Collection Date:	08/05/08 02:10 PM
Lab Order:	0808041	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	399	10.0	10.0		mg/L	100	08/07/08 02:24 PM
Magnesium	99.9	10.0	10.0		mg/L	100	08/07/08 02:24 PM
Potassium	10.4	10.0	10.0		mg/L	100	08/07/08 02:24 PM
Sodium	1070	100	100		mg/L	1000	08/06/08 11:34 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	5.89	0.300	1.00		mg/L	1	08/07/08 03:04 PM
Chloride	2440	30.0	100		mg/L	100	08/08/08 04:55 PM
Nitrate-N	0.242	0.100	0.500	J	mg/L	1	08/07/08 03:04 PM
Sulfate	632	100	300		mg/L	100	08/08/08 04:55 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	283	10.0	20.0		mg/L	1	08/07/08 09:43 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:43 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:43 AM
Alkalinity, Total (As CaCO3)	283	10.0	20.0		mg/L	1	08/07/08 09:43 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	8510	10.0	10.0		µmhos/cm	1	08/06/08 02:05 PM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	5460	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-9
Project:	Ballinger Seep	Lab ID:	0808041-12
Project No:	94057272B	Collection Date:	08/05/08 03:30 PM
Lab Order:	0808041	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	1300	100	100		mg/L	1000	08/06/08 11:39 PM
Magnesium	552	100	100		mg/L	1000	08/06/08 11:39 PM
Potassium	22.0	1.00	1.00		mg/L	10	08/07/08 08:55 PM
Sodium	1790	100	100		mg/L	1000	08/06/08 11:39 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	9.34	0.300	1.00		mg/L	1	08/07/08 03:20 PM
Chloride	6320	150	500		mg/L	500	08/08/08 05:26 PM
Nitrate-N	0.156	0.100	0.500	J	mg/L	1	08/07/08 03:20 PM
Sulfate	1590	500	1500		mg/L	500	08/08/08 05:26 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	247	10.0	20.0		mg/L	1	08/07/08 09:52 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:52 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 09:52 AM
Alkalinity, Total (As CaCO3)	247	10.0	20.0		mg/L	1	08/07/08 09:52 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	22400	50.0	50.0		µmhos/cm	5	08/06/08 02:05 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	15000	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/11/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-4
Project:	Ballinger Seep	Lab ID:	0808041-13
Project No:	94057272B	Collection Date:	08/05/08 04:20 PM
Lab Order:	0808041	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	996	10.0	10.0		mg/L	100	08/07/08 02:29 PM
Magnesium	260	10.0	10.0		mg/L	100	08/07/08 02:29 PM
Potassium	8.32	0.100	0.100		mg/L	1	08/07/08 11:00 PM
Sodium	1820	100	100		mg/L	1000	08/06/08 11:45 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	7.29	0.300	1.00		mg/L	1	08/07/08 03:35 PM
Chloride	4650	150	500		mg/L	500	08/08/08 05:42 PM
Nitrate-N	ND	0.100	0.500		mg/L	1	08/07/08 03:35 PM
Sulfate	1170	500	1500	J	mg/L	500	08/08/08 05:42 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	332	10.0	20.0		mg/L	1	08/07/08 10:02 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 10:02 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 10:02 AM
Alkalinity, Total (As CaCO3)	332	10.0	20.0		mg/L	1	08/07/08 10:02 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	17400	50.0	50.0		µmhos/cm	5	08/06/08 02:05 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	11100	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

CLIENT: Terracon, Inc.
Work Order: 0808041
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080806A

Sample ID:	MB-31239	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	MBLK	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 06:58 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		ND	0.100								
Magnesium		ND	0.100								
Potassium		ND	0.100								
Sodium		ND	0.100								

Sample ID:	LCS-31239	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	LCS	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 07:04 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4.42	0.100	5.00	0	88.4	80	120			
Magnesium		4.45	0.100	5.00	0	89.0	80	120			
Potassium		4.69	0.100	5.00	0	93.8	80	120			
Sodium		4.40	0.100	5.00	0	88.0	80	120			

Sample ID:	LCSD-31239	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	LCSD	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 07:09 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4.44	0.100	5.00	0	88.9	80	120	0.474	15	
Magnesium		4.48	0.100	5.00	0	89.5	80	120	0.560	15	
Potassium		4.71	0.100	5.00	0	94.1	80	120	0.341	15	
Sodium		4.42	0.100	5.00	0	88.5	80	120	0.499	15	

Sample ID:	0808041-03A MS	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	MS	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 07:29 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		1380	100	5.00	1350	540	80	120			S
Magnesium		624	100	5.00	603	416	80	120			S
Sodium		1480	100	5.00	1440	960	80	120			S

Sample ID:	0808041-03A MSD	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	MSD	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 07:35 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		1340	100	5.00	1350	-240	80	120	2.87	15	S
Magnesium		600	100	5.00	603	-54.0	80	120	3.84	15	S
Sodium		1430	100	5.00	1440	-160	80	120	3.85	15	S

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808041
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080806A

Sample ID:	MB-31240	Batch ID:	31240		TestNo:		SW6020		Units:		mg/L
SampType:	MBLK	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 05:29 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		ND	0.100								
Magnesium		ND	0.100								
Potassium		ND	0.100								
Sodium		ND	0.100								

Sample ID:	LCS-31240	Batch ID:	31240		TestNo:		SW6020		Units:		mg/L
SampType:	LCS	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 05:34 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4.45	0.100	5.00	0	89.1	80	120			
Magnesium		4.32	0.100	5.00	0	86.3	80	120			
Potassium		4.70	0.100	5.00	0	94.0	80	120			
Sodium		4.26	0.100	5.00	0	85.3	80	120			

Sample ID:	LCSD-31240	Batch ID:	31240		TestNo:		SW6020		Units:		mg/L
SampType:	LCSD	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 05:39 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4.39	0.100	5.00	0	87.8	80	120	1.42	15	
Magnesium		4.34	0.100	5.00	0	86.8	80	120	0.531	15	
Potassium		4.67	0.100	5.00	0	93.3	80	120	0.747	15	
Sodium		4.27	0.100	5.00	0	85.5	80	120	0.234	15	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808041
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080807A

Sample ID:	0808041-03A MS	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	MS	Run ID:	ICP-MS3_080807A		Analysis Date:		08/07/08 07:28 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		19.8	1.00	5.00	14.3	110	80	120			

Sample ID:	0808041-03A MSD	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	MSD	Run ID:	ICP-MS3_080807A		Analysis Date:		08/07/08 07:33 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		18.8	1.00	5.00	14.3	88.4	80	120	5.65	15	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808041
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080807A

Sample ID:	0808041-04A MS	Batch ID:	31240		TestNo:		SW6020		Units:		mg/L
SampType:	MS	Run ID:	ICP-MS3_080807A		Analysis Date:		08/07/08 01:28 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		368	10.0	5.00	373	-92.0	80	120			S
Magnesium		136	10.0	5.00	137	-20.0	80	120			S
Sodium		229	10.0	5.00	235	-124	80	120			S

Sample ID:	0808041-04A MSD	Batch ID:	31240		TestNo:		SW6020		Units:		mg/L
SampType:	MSD	Run ID:	ICP-MS3_080807A		Analysis Date:		08/07/08 01:34 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		379	10.0	5.00	373	112	80	120	2.73	15	
Magnesium		139	10.0	5.00	137	38.0	80	120	2.11	15	S
Sodium		235	10.0	5.00	235	-2.00	80	120	2.63	15	S

Sample ID:	0808041-04A MS	Batch ID:	31240		TestNo:		SW6020		Units:		mg/L
SampType:	MS	Run ID:	ICP-MS3_080807A		Analysis Date:		08/07/08 09:47 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		10.7	0.100	5.00	6.09	91.4	80	120			

Sample ID:	0808041-04A MSD	Batch ID:	31240		TestNo:		SW6020		Units:		mg/L
SampType:	MSD	Run ID:	ICP-MS3_080807A		Analysis Date:		08/07/08 09:52 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		10.4	0.100	5.00	6.09	86.8	80	120	2.18	15	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808041
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080807A

Sample ID:	MB-080807	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MBLK	Run ID:	IC_080807A		Analysis Date:		08/07/08 10:38 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		ND	1.00								
Chloride		ND	1.00								
Nitrate-N		ND	0.500								
Sulfate		ND	3.00								

Sample ID:	LCS-080807	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	LCS	Run ID:	IC_080807A		Analysis Date:		08/07/08 10:54 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		20.4	1.00	20.00	0	102	90	110			
Chloride		9.95	1.00	10.00	0	99.5	90	110			
Nitrate-N		5.02	0.500	5.000	0	100	90	110			
Sulfate		30.6	3.00	30.00	0	102	90	110			

Sample ID:	LCSD-080807	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	LCSD	Run ID:	IC_080807A		Analysis Date:		08/07/08 11:10 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.5	1.00	20.00	0	97.4	90	110	4.61	20	
Chloride		9.45	1.00	10.00	0	94.5	90	110	5.16	20	
Nitrate-N		4.78	0.500	5.000	0	95.6	90	110	4.85	20	
Sulfate		29.1	3.00	30.00	0	97.2	90	110	4.82	20	

Sample ID:	0808041-03B MS	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080807A		Analysis Date:		08/07/08 11:41 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		29.0	1.00	20.00	5.550	117	90	110			S
Nitrate-N		5.28	0.500	5.000	0.1100	103	90	110			

Sample ID:	0808041-03B MSD	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080807A		Analysis Date:		08/07/08 11:57 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		29.1	1.00	20.00	5.550	118	90	110	0.251	20	S
Nitrate-N		5.38	0.500	5.000	0.1100	105	90	110	1.90	20	

Sample ID:	0808041-04B MS	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080807A		Analysis Date:		08/07/08 12:28 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.4	1.00	20.00	1.010	91.9	90	110			
Nitrate-N		5.68	0.500	5.000	1.080	91.9	90	110			

Sample ID:	0808041-04B MSD	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080807A		Analysis Date:		08/07/08 12:44 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.7	1.00	20.00	1.010	93.6	90	110	1.69	20	
Nitrate-N		5.75	0.500	5.000	1.080	93.5	90	110	1.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808041
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080807A

Sample ID:	0808041-03B MS	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080807A		Analysis Date:		08/07/08 07:01 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		10300	500	5000	4021	126	90	110			S
Sample ID:	0808041-03B MSD	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080807A		Analysis Date:		08/07/08 07:17 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		9610	500	5000	4021	112	90	110	7.05	20	S
Sample ID:	0808041-04B MS	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080807A		Analysis Date:		08/07/08 07:48 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		1230	30.0	300.0	922.7	101	90	110			
Sample ID:	0808041-04B MSD	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080807A		Analysis Date:		08/07/08 08:04 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		1230	30.0	300.0	922.7	101	90	110	0.105	20	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808041
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080808A

Sample ID:	MB-080808	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	MBLK	Run ID:	IC_080808A		Analysis Date:		08/08/08 09:40 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		ND	1.00								
Chloride		ND	1.00								
Nitrate-N		ND	0.500								
Sulfate		ND	3.00								

Sample ID:	LCS-080808	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	LCS	Run ID:	IC_080808A		Analysis Date:		08/08/08 09:55 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.8	1.00	20.00	0	98.8	90	110			
Chloride		9.63	1.00	10.00	0	96.3	90	110			
Nitrate-N		4.84	0.500	5.000	0	96.8	90	110			
Sulfate		29.4	3.00	30.00	0	97.9	90	110			

Sample ID:	LCSD-080808	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	LCSD	Run ID:	IC_080808A		Analysis Date:		08/08/08 10:10 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.6	1.00	20.00	0	98.1	90	110	0.666	20	
Chloride		9.60	1.00	10.00	0	96.0	90	110	0.383	20	
Nitrate-N		4.82	0.500	5.000	0	96.5	90	110	0.331	20	
Sulfate		29.3	3.00	30.00	0	97.7	90	110	0.202	20	

Sample ID:	0808041-03B MS	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080808A		Analysis Date:		08/08/08 10:52 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		2290	150	1500	836.4	97.0	90	110			

Sample ID:	0808041-03B MSD	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080808A		Analysis Date:		08/08/08 11:08 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		2260	150	1500	836.4	95.0	90	110	1.30	20	

Sample ID:	0808041-04B MS	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080808A		Analysis Date:		08/08/08 11:41 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		480	20.0	200.0	286.6	96.9	90	110			

Sample ID:	0808041-04B MSD	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080808A		Analysis Date:		08/08/08 11:57 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		480	20.0	200.0	286.6	96.7	90	110	0.0804	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808041
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080807A

Sample ID:	MB-080807	Batch ID:	R39052		TestNo:		M2320 B		Units:		mg/L
SampType:	MBLK	Run ID:	TITRATOR_080807A		Analysis Date:		08/07/08 08:28 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)		ND	20.0								
Alkalinity, Carbonate (As CaCO3)		ND	20.0								
Alkalinity, Hydroxide (As CaCO3)		ND	20.0								
Alkalinity, Total (As CaCO3)		ND	20.0								

Sample ID:	LCS-080807	Batch ID:	R39052		TestNo:		M2320 B		Units:		mg/L
SampType:	LCS	Run ID:	TITRATOR_080807A		Analysis Date:		08/07/08 08:32 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)		51.8	20.0	50.00	0	104	74	129			

Sample ID:	0808041-13B DUP	Batch ID:	R39052		TestNo:		M2320 B		Units:		mg/L
SampType:	DUP	Run ID:	TITRATOR_080807A		Analysis Date:		08/07/08 10:13 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)		331	20.0	0	332.4				0.483	20	
Alkalinity, Carbonate (As CaCO3)		0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)		331	20.0	0	332.4				0.483	20	

Sample ID:	0808039-13B DUP	Batch ID:	R39052		TestNo:		M2320 B		Units:		mg/L
SampType:	DUP	Run ID:	TITRATOR_080807A		Analysis Date:		08/07/08 11:05 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)		267	20.0	0	268.7				0.567	20	
Alkalinity, Carbonate (As CaCO3)		0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)		267	20.0	0	268.7				0.567	20	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808041
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080806A

Sample ID:	MBLK-080625	Batch ID:	CONDW-8/6/08		TestNo:		M2510 B			Units:	µmhos/cm
SampType:	MBLK	Run ID:	WC_080806A		Analysis Date:		08/06/08 02:05 PM			Prep Date:	08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		ND	10.0								

Sample ID:	LCS-080625	Batch ID:	CONDW-8/6/08		TestNo:		M2510 B			Units:	µmhos/cm
SampType:	LCS	Run ID:	WC_080806A		Analysis Date:		08/06/08 02:05 PM			Prep Date:	08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		1360	10.0	1413	0	96.6	95	105			

Sample ID:	0808041-03B DUP	Batch ID:	CONDW-8/6/08		TestNo:		M2510 B			Units:	µmhos/cm
SampType:	DUP	Run ID:	WC_080806A		Analysis Date:		08/06/08 02:05 PM			Prep Date:	08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		22000	50.0	0	22550				2.24	2	

Sample ID:	0808041-04B DUP	Batch ID:	CONDW-8/6/08		TestNo:		M2510 B			Units:	µmhos/cm
SampType:	DUP	Run ID:	WC_080806A		Analysis Date:		08/06/08 02:05 PM			Prep Date:	08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		3560	10.0	0	3510				1.41	2	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808041
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080806C

Sample ID:	MB-080714	Batch ID:	TDS_W-8/6/08	TestNo:	M2540C			Units:	mg/L		
SampType:	MBLK	Run ID:	WC_080806C	Analysis Date:	08/06/08 03:45 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		ND	10.0								

Sample ID:	LCS-080714	Batch ID:	TDS_W-8/6/08	TestNo:	M2540C			Units:	mg/L		
SampType:	LCS	Run ID:	WC_080806C	Analysis Date:	08/06/08 03:45 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		732	10.0	745.6	0	98.2	90	113			

Sample ID:	0808041-10B DUP	Batch ID:	TDS_W-8/6/08	TestNo:	M2540C			Units:	mg/L		
SampType:	DUP	Run ID:	WC_080806C	Analysis Date:	08/06/08 03:45 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		7460	10.0	0	7380				1.01	5	

Sample ID:	0808039-07D DUP	Batch ID:	TDS_W-8/6/08	TestNo:	M2540C			Units:	mg/L		
SampType:	DUP	Run ID:	WC_080806C	Analysis Date:	08/06/08 03:45 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		13600	10.0	0	13220				2.54	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

DHL ANALYTICAL

August 13, 2008

Max Majesko
Terracon, Inc.
8901 Carpenter Fwy #100
Dallas, Texas 75247

TEL: (214) 630-1010
FAX: (614) 630-7070

Order No.: 0808051

RE: Ballinger Seep

Dear Max Majesko:

DHL Analytical received 5 sample(s) on 8/7/2008 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative and all estimated uncertainties of results are within method specifications.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-08A-TX

2300 Double Creek Drive • Round Rock, TX 78664 • Phone (512) 388-8222 • FAX (512) 388-8229
www.dhlanalytical.com

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DHL ANALYTICAL

2300 Double Creek Drive • Round Rock, TX 78664
Phone (512) 388-8222 • FAX (512) 388-8229

№ 37452

CHAIN-OF-CUSTODY

CLIENT: Terracon Consultants
ADDRESS: 8901 John Carpenter Fwy
PHONE: 214-630-1010 FAX 214-630-7070
DATA REPORTED TO: Max Majesko
ADDITIONAL REPORT COPIES TO:

DATE: 8/6/08 PAGE ____ OF ____
PO #: ____ DHL WORK ORDER #: 0808051
PROJECT LOCATION OR NAME: Ballinger
CLIENT PROJECT #: ~~94087094057272~~ COLLECTOR: Ein Loyd

Authorize 5% surcharge for TRRP report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ D.W. 200.8 ☐ OTHER LIST ☐	LEAD - TOTAL ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS X TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE X ANIONS ☐ ALKALINITY ☐	Na, K, Mg, Ca, Sulfate, Nitrate Bromide, Carbonate Alkalinity Bicarbonate Alkalinity Conductivity	FIELD NOTES
MW-5	01	8/6/08	8:25	W	500ml	2	X			X														X			X	X	X	X	
MW-13	02	8/6/08	9:10	W	500ml	2	X			X														X			X	X	X	X	
MW-Dup	03	8/6/08	9:55	W	500ml	2	X			X														X			X	X	X	X	
MW-14	04	8/6/08	10:55	W	500ml	2	X			X														X			X	X	X	X	
Equip Blank	05	8/6/08	11:10	W	500ml	2	X			X														X			X	X	X	X	

TOTAL

RELINQUISHED BY: (Signature) Ein Loyd — DATE/TIME 8/6/08 13:40 — RECEIVED BY: (Signature) Fed ex

RELINQUISHED BY: (Signature) Fed ex — DATE/TIME 8/7/08 10:30 — RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature) — DATE/TIME — RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☐
OTHER ☐ ____

LABORATORY USE ONLY:
RECEIVING TEMP: 2.0 THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # Fed ex
☐ APC DELIVERY
☐ HAND DELIVERED

DHL Analytical

Sample Receipt Checklist

Client Name **Terracon, Inc.** Date Received: **8/7/2008**

Work Order Number **0808051** Received by **JB**

Checklist completed by: Signature 8/7/08 Date Reviewed by DL Initials 8/7/08 Date

Carrier name: FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Adjusted? NO Checked by JB

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

DHL Analytical Date: 08/13/08

CLIENT:	Terracon, Inc.
Project:	Ballinger Seep
Lab Order:	0808051

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, E300, M2320 B, M2510 B and M2540C.

For Anions analysis by method E300 sample MW-DUP has Nitriate-N reported outside of HoldTime due to instrument failure on 8/7/08 (original analysis).

All method blanks, sample duplicates, laboratory spikes, and/or matrix spikes met quality assurance objectives except where noted in the following. For Anions analysis by method E300 the matrix spike and matrix spike duplicate recoveries were above control limits for Bromide and Chloride. These are flagged accordingly in the enclosed QC summary report. The "S" flag denotes spike recovery was outside control limits. The LCS was within control limits for these analytes. No further corrective actions were taken.

For Metals analysis by method SW6020 the matrix spikes and matrix spike duplicate recoveries were out of control limits for some analytes. These are flagged accordingly. The "S" flag denotes spike recovery was outside control limits. The LCS was within control limits for these analytes. No further corrective actions were taken.

DHL Analytical

Date: 08/13/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-5
Project:	Ballinger Seep	Lab ID:	0808051-01
Project No:	94057272	Collection Date:	08/06/08 08:25 AM
Lab Order:	0808051	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	1780	100	100		mg/L	1000	08/11/08 01:58 PM
Magnesium	878	100	100		mg/L	1000	08/11/08 01:58 PM
Potassium	63.0	2.00	2.00		mg/L	20	08/08/08 05:26 PM
Sodium	8850	100	100		mg/L	1000	08/11/08 01:58 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	30.0	3.00	10.0		mg/L	10	08/07/08 03:51 PM
Chloride	19000	150	500		mg/L	500	08/08/08 04:08 PM
Nitrate-N	1.87	1.00	5.00	J	mg/L	10	08/07/08 03:51 PM
Sulfate	1440	10.0	30.0		mg/L	10	08/07/08 03:51 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	255	10.0	20.0		mg/L	1	08/08/08 08:52 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 08:52 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 08:52 AM
Alkalinity, Total (As CaCO3)	255	10.0	20.0		mg/L	1	08/08/08 08:52 AM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	58400	50.0	50.0		µmhos/cm	5	08/08/08 10:40 AM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	37000	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/13/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-13
Project:	Ballinger Seep	Lab ID:	0808051-02
Project No:	94057272	Collection Date:	08/06/08 09:10 AM
Lab Order:	0808051	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	500	50.0	50.0		mg/L	500	08/11/08 02:24 PM
Magnesium	360	50.0	50.0		mg/L	500	08/11/08 02:24 PM
Potassium	10.8	0.500	0.500		mg/L	5	08/08/08 07:45 PM
Sodium	850	50.0	50.0		mg/L	500	08/11/08 02:24 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	7.33	0.300	1.00		mg/L	1	08/07/08 04:07 PM
Chloride	2330	30.0	100		mg/L	100	08/12/08 10:18 AM
Nitrate-N	0.852	0.100	0.500		mg/L	1	08/07/08 04:07 PM
Sulfate	1280	100	300		mg/L	100	08/12/08 10:18 AM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	213	10.0	20.0		mg/L	1	08/08/08 08:58 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 08:58 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 08:58 AM
Alkalinity, Total (As CaCO3)	213	10.0	20.0		mg/L	1	08/08/08 08:58 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	8870	10.0	10.0		µmhos/cm	1	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	6030	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/13/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-DUP
Project:	Ballinger Seep	Lab ID:	0808051-03
Project No:	94057272	Collection Date:	08/06/08 09:55 AM
Lab Order:	0808051	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	1820	100	100		mg/L	1000	08/11/08 03:04 PM
Magnesium	894	100	100		mg/L	1000	08/11/08 03:04 PM
Potassium	58.2	2.00	2.00		mg/L	20	08/08/08 06:30 PM
Sodium	8520	100	100		mg/L	1000	08/11/08 03:04 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	80.2	3.00	10.0		mg/L	10	08/08/08 06:45 PM
Chloride	18500	1500	5000		mg/L	5000	08/08/08 06:13 PM
Nitrate-N	16.8	1.00	5.00		mg/L	10	08/08/08 06:45 PM
Sulfate	1360	100	300		mg/L	100	08/08/08 06:29 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	259	10.0	20.0		mg/L	1	08/08/08 01:32 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:32 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:32 PM
Alkalinity, Total (As CaCO3)	259	10.0	20.0		mg/L	1	08/08/08 01:32 PM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	59800	50.0	50.0		µmhos/cm	5	08/08/08 10:40 AM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	37800	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/13/08

CLIENT:	Terracon, Inc.	Client Sample ID:	MW-16
Project:	Ballinger Seep	Lab ID:	0808051-04
Project No:	94057272	Collection Date:	08/06/08 10:55 AM
Lab Order:	0808051	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	1480	50.0	50.0		mg/L	500	08/11/08 02:58 PM
Magnesium	614	50.0	50.0		mg/L	500	08/11/08 02:58 PM
Potassium	12.1	0.500	0.500		mg/L	5	08/08/08 07:56 PM
Sodium	2620	50.0	50.0		mg/L	500	08/11/08 02:58 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	11.6	0.300	1.00		mg/L	1	08/07/08 06:14 PM
Chloride	7990	150	500		mg/L	500	08/08/08 07:32 PM
Nitrate-N	0.252	0.100	0.500	J	mg/L	1	08/07/08 06:14 PM
Sulfate	1410	100	300		mg/L	100	08/08/08 07:16 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	248	10.0	20.0		mg/L	1	08/08/08 01:40 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:40 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:40 PM
Alkalinity, Total (As CaCO3)	248	10.0	20.0		mg/L	1	08/08/08 01:40 PM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	26900	50.0	50.0		µmhos/cm	5	08/08/08 10:40 AM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	16800	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/13/08

CLIENT:	Terracon, Inc.	Client Sample ID:	Equip Blank
Project:	Ballinger Seep	Lab ID:	0808051-05
Project No:	94057272	Collection Date:	08/06/08 11:10 AM
Lab Order:	0808051	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		SW6020					Analyst: AJR
Calcium	ND	0.100	0.100		mg/L	1	08/11/08 03:09 PM
Magnesium	ND	0.100	0.100		mg/L	1	08/11/08 03:09 PM
Potassium	ND	0.100	0.100		mg/L	1	08/11/08 03:09 PM
Sodium	ND	0.100	0.100		mg/L	1	08/11/08 03:09 PM
Anions by IC method - Water		E300					Analyst: JBC
Bromide	ND	0.300	1.00		mg/L	1	08/07/08 05:11 PM
Chloride	ND	0.300	1.00		mg/L	1	08/07/08 05:11 PM
Nitrate-N	ND	0.100	0.500		mg/L	1	08/07/08 05:11 PM
Sulfate	1.01	1.00	3.00	J	mg/L	1	08/07/08 05:11 PM
Alkalinity		M2320 B					Analyst: SW
Alkalinity, Bicarbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:42 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:42 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:42 PM
Alkalinity, Total (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:42 PM
Specific Conductance		M2510 B					Analyst: SW
Specific Conductance	ND	10.0	10.0		µmhos/cm	1	08/08/08 10:40 AM
Total Dissolved Solids		M2540C					Analyst: SW
Total Dissolved Solids (Residue, Filterable)	ND	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

CLIENT: Terracon, Inc.
Work Order: 0808051
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS2_080808A

Sample ID:	MB-31256	Batch ID:	31256		TestNo:		SW6020		Units:		mg/L
SampType:	MBLK	Run ID:	ICP-MS2_080808A		Analysis Date:		08/08/08 03:44 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		ND	0.100								
Sample ID:	LCS-31256	Batch ID:	31256		TestNo:		SW6020		Units:		mg/L
SampType:	LCS	Run ID:	ICP-MS2_080808A		Analysis Date:		08/08/08 03:54 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		4.87	0.100	5.00	0	97.5	80	120			
Sample ID:	LCSD-31256	Batch ID:	31256		TestNo:		SW6020		Units:		mg/L
SampType:	LCSD	Run ID:	ICP-MS2_080808A		Analysis Date:		08/08/08 04:00 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		4.86	0.100	5.00	0	97.1	80	120			
Sample ID:	0808051-01A MS	Batch ID:	31256		TestNo:		SW6020		Units:		mg/L
SampType:	MS	Run ID:	ICP-MS2_080808A		Analysis Date:		08/08/08 05:42 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		65.8	2.00	5.00	63.0	55.2	80	120			S
Sample ID:	0808051-01A MSD	Batch ID:	31256		TestNo:		SW6020		Units:		mg/L
SampType:	MSD	Run ID:	ICP-MS2_080808A		Analysis Date:		08/08/08 05:47 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		65.5	2.00	5.00	63.0	50.4	80	120	0.366	15	S

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808051
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080811A

Sample ID:	MB-31256	Batch ID:	31256		TestNo:		SW6020		Units:		mg/L
SampType:	MBLK	Run ID:	ICP-MS3_080811A		Analysis Date:		08/11/08 01:42 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		ND	0.100								
Magnesium		ND	0.100								
Sodium		ND	0.100								

Sample ID:	LCS-31256	Batch ID:	31256		TestNo:		SW6020		Units:		mg/L
SampType:	LCS	Run ID:	ICP-MS3_080811A		Analysis Date:		08/11/08 01:47 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4.74	0.100	5.00	0	94.7	80	120			
Magnesium		4.88	0.100	5.00	0	97.6	80	120			
Sodium		4.87	0.100	5.00	0	97.4	80	120			

Sample ID:	LCSD-31256	Batch ID:	31256		TestNo:		SW6020		Units:		mg/L
SampType:	LCSD	Run ID:	ICP-MS3_080811A		Analysis Date:		08/11/08 01:52 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4.75	0.100	5.00	0	95.0	80	120	0.295	15	
Magnesium		4.89	0.100	5.00	0	97.7	80	120	0.143	15	
Sodium		4.85	0.100	5.00	0	97.0	80	120	0.432	15	

Sample ID:	0808051-01A MS	Batch ID:	31256		TestNo:		SW6020		Units:		mg/L
SampType:	MS	Run ID:	ICP-MS3_080811A		Analysis Date:		08/11/08 02:13 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		1770	100	5.00	1780	-280	80	120			S
Magnesium		860	100	5.00	878	-358	80	120			S
Sodium		8710	100	5.00	8850	-2820	80	120			S

Sample ID:	0808051-01A MSD	Batch ID:	31256		TestNo:		SW6020		Units:		mg/L
SampType:	MSD	Run ID:	ICP-MS3_080811A		Analysis Date:		08/11/08 02:18 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		1760	100	5.00	1780	-460	80	120	0.511	15	S
Magnesium		859	100	5.00	878	-364	80	120	0.0349	15	S
Sodium		8640	100	5.00	8850	-4180	80	120	0.784	15	S

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808051
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080807A

Sample ID:	MB-080807	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MBLK	Run ID:	IC_080807A		Analysis Date:		08/07/08 10:38 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		ND	1.00								
Chloride		ND	1.00								
Nitrate-N		ND	0.500								
Sulfate		ND	3.00								

Sample ID:	LCS-080807	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	LCS	Run ID:	IC_080807A		Analysis Date:		08/07/08 10:54 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		20.4	1.00	20.00	0	102	90	110			
Chloride		9.95	1.00	10.00	0	99.5	90	110			
Nitrate-N		5.02	0.500	5.000	0	100	90	110			
Sulfate		30.6	3.00	30.00	0	102	90	110			

Sample ID:	LCSD-080807	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	LCSD	Run ID:	IC_080807A		Analysis Date:		08/07/08 11:10 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.5	1.00	20.00	0	97.4	90	110	4.61	20	
Chloride		9.45	1.00	10.00	0	94.5	90	110	5.16	20	
Nitrate-N		4.78	0.500	5.000	0	95.6	90	110	4.85	20	
Sulfate		29.1	3.00	30.00	0	97.2	90	110	4.82	20	

Sample ID:	0808041-03B MS	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080807A		Analysis Date:		08/07/08 11:41 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		29.0	1.00	20.00	5.550	117	90	110			S
Nitrate-N		5.28	0.500	5.000	0.1100	103	90	110			

Sample ID:	0808041-03B MSD	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080807A		Analysis Date:		08/07/08 11:57 AM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		29.1	1.00	20.00	5.550	118	90	110	0.251	20	S
Nitrate-N		5.38	0.500	5.000	0.1100	105	90	110	1.90	20	

Sample ID:	0808041-04B MS	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080807A		Analysis Date:		08/07/08 12:28 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.4	1.00	20.00	1.010	91.9	90	110			
Nitrate-N		5.68	0.500	5.000	1.080	91.9	90	110			

Sample ID:	0808041-04B MSD	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080807A		Analysis Date:		08/07/08 12:44 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.7	1.00	20.00	1.010	93.6	90	110	1.69	20	
Nitrate-N		5.75	0.500	5.000	1.080	93.5	90	110	1.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808051
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080807A

Sample ID:	0808041-03B MS	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080807A		Analysis Date:		08/07/08 07:01 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		10300	500	5000	4021	126	90	110			S
Sample ID:	0808041-03B MSD	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080807A		Analysis Date:		08/07/08 07:17 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		9610	500	5000	4021	112	90	110	7.05	20	S
Sample ID:	0808041-04B MS	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080807A		Analysis Date:		08/07/08 07:48 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		1230	30.0	300.0	922.7	101	90	110			
Sample ID:	0808041-04B MSD	Batch ID:	R39050		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080807A		Analysis Date:		08/07/08 08:04 PM		Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		1230	30.0	300.0	922.7	101	90	110	0.105	20	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808051
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080808A

Sample ID:	MB-080808	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	MBLK	Run ID:	IC_080808A		Analysis Date:		08/08/08 09:40 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		ND	1.00								
Chloride		ND	1.00								
Nitrate-N		ND	0.500								
Sulfate		ND	3.00								

Sample ID:	LCS-080808	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	LCS	Run ID:	IC_080808A		Analysis Date:		08/08/08 09:55 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.8	1.00	20.00	0	98.8	90	110			
Chloride		9.63	1.00	10.00	0	96.3	90	110			
Nitrate-N		4.84	0.500	5.000	0	96.8	90	110			
Sulfate		29.4	3.00	30.00	0	97.9	90	110			

Sample ID:	LCSD-080808	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	LCSD	Run ID:	IC_080808A		Analysis Date:		08/08/08 10:10 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.6	1.00	20.00	0	98.1	90	110	0.666	20	
Chloride		9.60	1.00	10.00	0	96.0	90	110	0.383	20	
Nitrate-N		4.82	0.500	5.000	0	96.5	90	110	0.331	20	
Sulfate		29.3	3.00	30.00	0	97.7	90	110	0.202	20	

Sample ID:	0808041-03B MS	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080808A		Analysis Date:		08/08/08 10:52 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		2290	150	1500	836.4	97.0	90	110			

Sample ID:	0808041-03B MSD	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080808A		Analysis Date:		08/08/08 11:08 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		2260	150	1500	836.4	95.0	90	110	1.30	20	

Sample ID:	0808041-04B MS	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080808A		Analysis Date:		08/08/08 11:41 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		480	20.0	200.0	286.6	96.9	90	110			

Sample ID:	0808041-04B MSD	Batch ID:	R39071		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080808A		Analysis Date:		08/08/08 11:57 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		480	20.0	200.0	286.6	96.7	90	110	0.0804	20	

Qualifiers:					
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808051
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080812A

Sample ID:	MB-080812	Batch ID:	R39116		TestNo:	E300			Units:	mg/L	
SampType:	MBLK	Run ID:	IC_080812A		Analysis Date:	08/12/08 10:03 AM			Prep Date:	08/12/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		ND	1.00								
Sulfate		ND	3.00								

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808051
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080808A

Sample ID:	MB-080808	Batch ID:	R39081	TestNo:	M2320 B	Units:	mg/L
SampType:	MBLK	Run ID:	TITRATOR_080808A	Analysis Date:	08/08/08 08:33 AM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID:	LCS-080808	Batch ID:	R39081	TestNo:	M2320 B	Units:	mg/L
SampType:	LCS	Run ID:	TITRATOR_080808A	Analysis Date:	08/08/08 08:37 AM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	0	20.0	0							
Alkalinity, Carbonate (As CaCO3)	44.2	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	51.2	20.0	50.00	0	102	74	129			

Sample ID:	0808056-05B DUP	Batch ID:	R39081	TestNo:	M2320 B	Units:	mg/L
SampType:	DUP	Run ID:	TITRATOR_080808A	Analysis Date:	08/08/08 10:18 AM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	324	20.0	0	325.0				0.370	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	324	20.0	0	325.0				0.370	20	

Sample ID:	0808056-13B DUP	Batch ID:	R39081	TestNo:	M2320 B	Units:	mg/L
SampType:	DUP	Run ID:	TITRATOR_080808A	Analysis Date:	08/08/08 12:13 PM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	299	20.0	0	300.8				0.640	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	299	20.0	0	300.8				0.640	20	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808051
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080808A

Sample ID:	MBLK-080808	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	MBLK	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		ND	10.0								

Sample ID:	LCS-080808	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	LCS	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		1370	10.0	1413	0	96.7	95	105			

Sample ID:	0808056-03D DUP	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	DUP	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		60800	50.0	0	59450				2.16	2	

Sample ID:	0808056-13D DUP	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	DUP	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		35000	50.0	0	35800				2.26	2	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: Terracon, Inc.
Work Order: 0808051
Project: Ballinger Seep

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080808B

Sample ID:	MB-080808	Batch ID:	TDS_W-8/8/08	TestNo:	M2540C	Units:	mg/L
SampType:	MBLK	Run ID:	WC_080808B	Analysis Date:	08/08/08 02:30 PM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi	ND	10.0								

Sample ID:	LCS-080808	Batch ID:	TDS_W-8/8/08	TestNo:	M2540C	Units:	mg/L
SampType:	LCS	Run ID:	WC_080808B	Analysis Date:	08/08/08 02:30 PM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi	742	10.0	745.6	0	99.5	90	113			

Sample ID:	0808056-05D DUP	Batch ID:	TDS_W-8/8/08	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_080808B	Analysis Date:	08/08/08 02:30 PM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi	9700	10.0	0	10180				4.78	5	

Sample ID:	0808056-13D DUP	Batch ID:	TDS_W-8/8/08	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_080808B	Analysis Date:	08/08/08 02:30 PM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi	21300	10.0	0	22060				3.32	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

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APPENDIX E

Calculation of Seep Quantity

Determination of Quantity of Upper Seep
Ballinger Seep
Ballinger, Runnels County, Texas

Groundwater Seepage Velocity

$$V = \frac{Ki}{n}$$

V = seepage velocity (groundwater)
K = hydraulic conductivity
i = hydraulic gradient
n = effective porosity

Monitor Well	Test Date	Slug Test	Hydraulic Conductivity (centimeters/second)	Well Yield (gallons/day)
MW-3	4-26-07	Rising Head	1.4xE-6	3
MW-3	4-26-07	Falling Head	1.3xE-5	14
		Arithmetic Mean	7.2xE-6	8.5

K = 7.2xE-6 cm/sec x 86,400 sec/day x 0.03281 feet/cm = 0.02 feet/day
i = 0.0449 ft/ft
n = 0.03 – 0.09 (estimated range)

$$V = \frac{Ki}{n}$$

$$V = \frac{0.02 \text{ feet/day} \times 0.0449}{0.09}$$

$$V = \frac{0.000898 \text{ feet/day}}{0.09}$$

V = 0.01 feet/day

$$V = \frac{Ki}{n}$$

$$V = \frac{0.02 \text{ feet/day} \times 0.0449}{0.03}$$

$$V = \frac{0.000898 \text{ feet/day}}{0.03}$$

V = 0.03 feet/day

Seep Quantity

Estimated Seep Size: Length = 100 feet
Width = X feet/day
Height = 4.0 feet

Q = 100 feet x 0.01 feet/day x 4.0 feet

Q = 4 ft^3/day x 7.48 gallons/ft^3

Q = 30 gallons/day x 0.4 (porosity of clay)

Quantity of Seep = 12 gallons/day

Q = 100 feet x 0.03 feet/day x 4.0 feet

Q = 12 ft^3/day x 7.48 gallons/ft^3

Q = 90 gallons/day x 0.4 (porosity of clay)

Quantity of Seep = 36 gallons/day

Determination of Quantity of Lower Seep
Ballinger Seep
Ballinger, Runnels County, Texas

Groundwater Seepage Velocity

$$V = \frac{Ki}{n}$$

V = seepage velocity (groundwater)
K = hydraulic conductivity
i = hydraulic gradient
n = effective porosity

Monitor Well	Test Date	Slug Test	Hydraulic Conductivity (centimeters/second)	Well Yield (gallons/day)
MW-1	7-21-06	Rising Head	1.9xE-4	300
MW-1	7-21-06	Falling Head	4.8xE-4	600
		Arithmetic Mean	3.35xE-4	450

K = 3.35xE-4 cm/sec x 86,400 sec/day x 0.03281 feet/cm = 0.95 feet/day
i = 0.0449 ft/ft
n = 0.03 – 0.09 (estimated range)

$$V = \frac{Ki}{n}$$

$$V = \frac{0.95 \text{ feet/day} \times 0.0449}{0.09}$$

$$V = \frac{0.042655 \text{ feet/day}}{0.09}$$

V = 0.47 feet/day

$$V = \frac{Ki}{n}$$

$$V = \frac{0.95 \text{ feet/day} \times 0.0449}{0.03}$$

$$V = \frac{0.042655 \text{ feet/day}}{0.03}$$

V = 1.42 feet/day

Seep Quantity

Estimated Seep Size: Length = 100 feet
Width = X feet/day
Height = 0.25 feet

Q = 100 feet x 0.47 feet/day x 0.25 feet

Q = 11.75 ft^3/day x 7.48 gallons/ft^3

Q = 88 gallons/day x 0.4 (porosity of clay)

Quantity of Seep = 35 gallons/day

Q = 100 feet x 1.42 feet/day x 0.25 feet

Q = 35.5 ft^3/day x 7.48 gallons/ft^3

Q = 266 gallons/day x 0.4 (porosity of clay)

Quantity of Seep = 106 gallons/day

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APPENDIX F

Photographs



Photo 1 View to the east (from the tributary) of the installation of monitor well MW-1 located approximately 225 feet upstream of the Colorado River. (photo date: 7/17/06)

Photo Page 1
Ballinger Seep
Ballinger, Runnels County, Texas
Terracon Project No. 94057272

Terracon

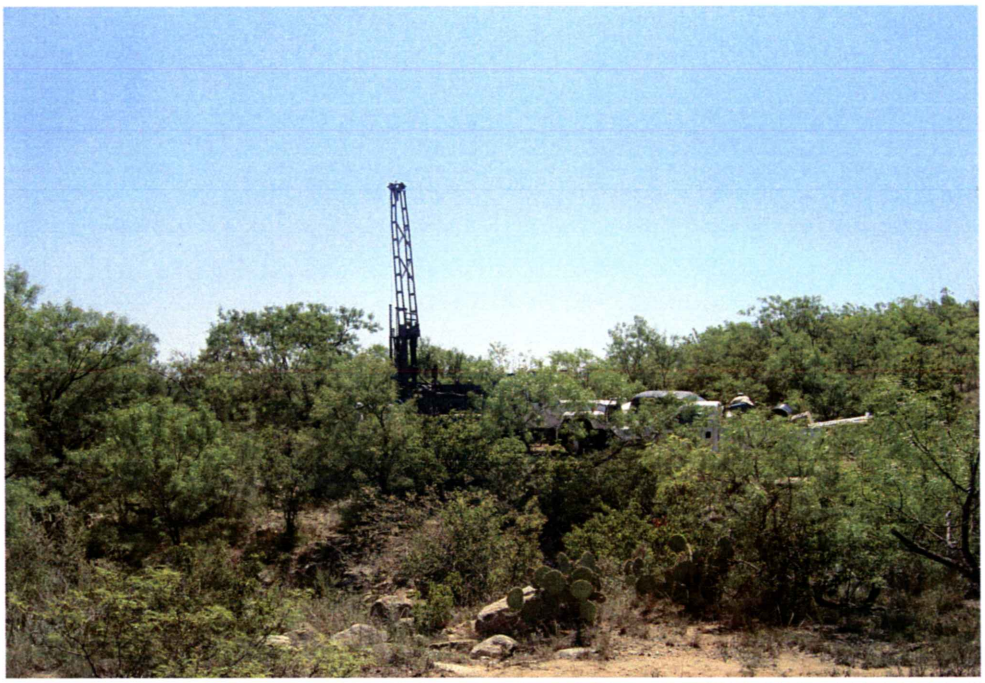


Photo 2 View to the east of the installation of monitor well MW-1 adjacent to the lower seep area located in the tributary approximately 225 feet upstream of the Colorado River. (photo date: 7/17/06)

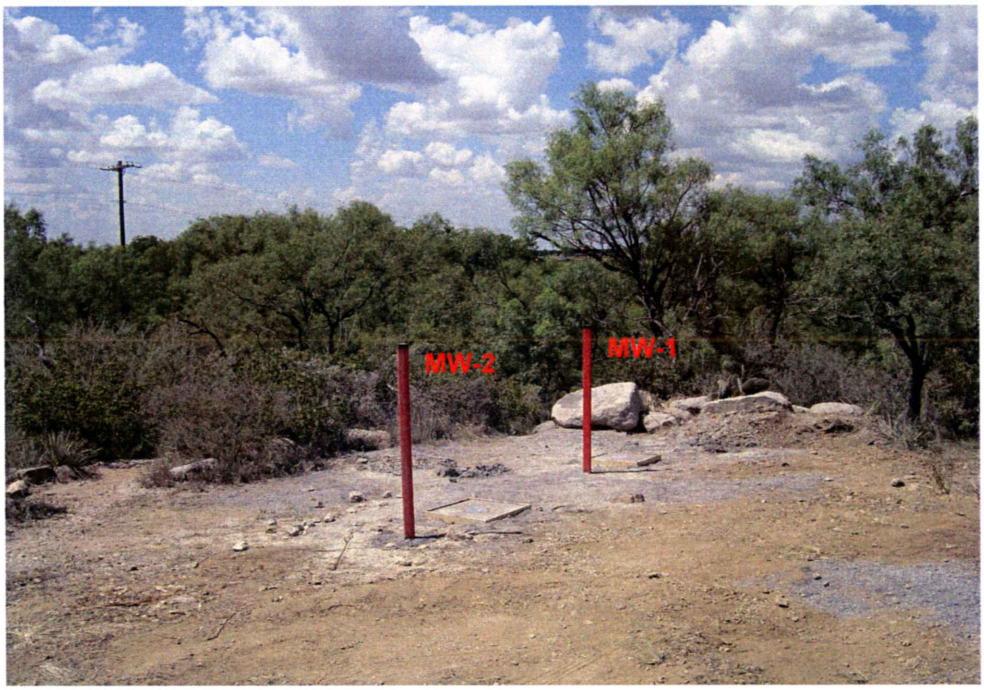


Photo 3 View to the northwest of monitor wells MW-1 and MW-2 following completion. (photo date: 7/18/06)



Photo 4 View to the east of the installation of monitor well MW-3 adjacent to the former upper seep area located in the tributary approximately 600 feet upstream of the Colorado River. (photo date: 7/18/06)



Photo 5 View to the west of the installation of monitor well MW-4 located on the opposite (west) side of the tributary from the lower seep located approximately 225 feet upstream of the Colorado River. (photo date: 7/18/06)

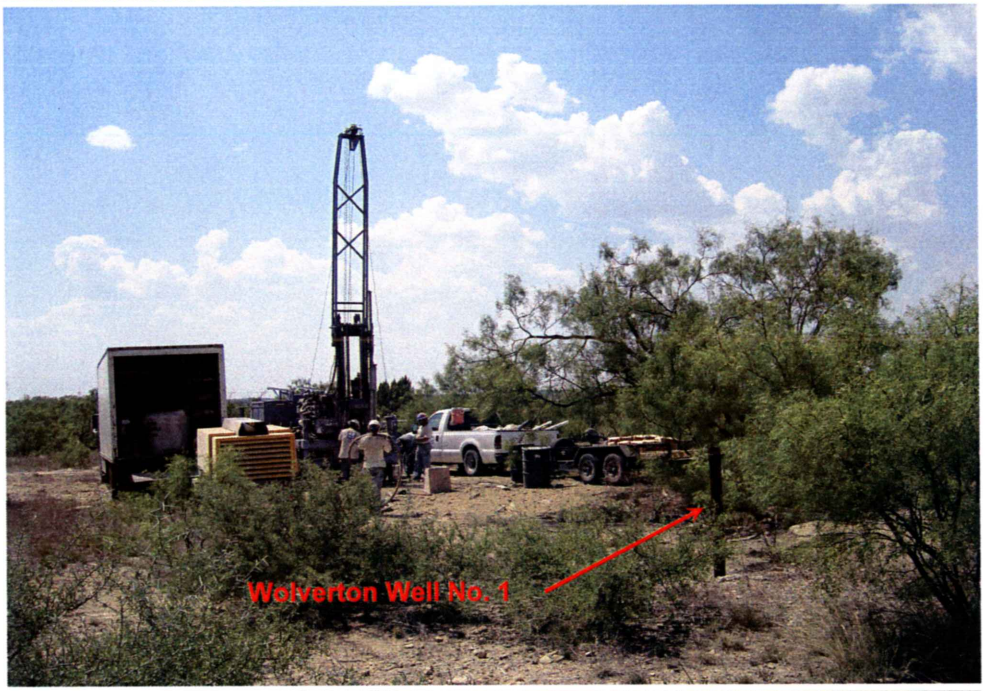


Photo 6 View to the northwest of the installation of monitor well MW-5 located adjacent and down-gradient of the Wolverton Well No. 1. (photo date: 7/18/06)



Photo 7 View of the rock cores from monitor well MW-5 (with indicated depth intervals) which shows the typical lithology encountered at the site. (photo date: 7/19/06)



Photo 8 View to the west of the installation of monitor well MW-7 located up-gradient of the Colorado River. (photo date: 7/20/06)

Photo Page 4
Ballinger Seep
Ballinger, Runnels County, Texas
Terracon Project No. 94057272
Terracon

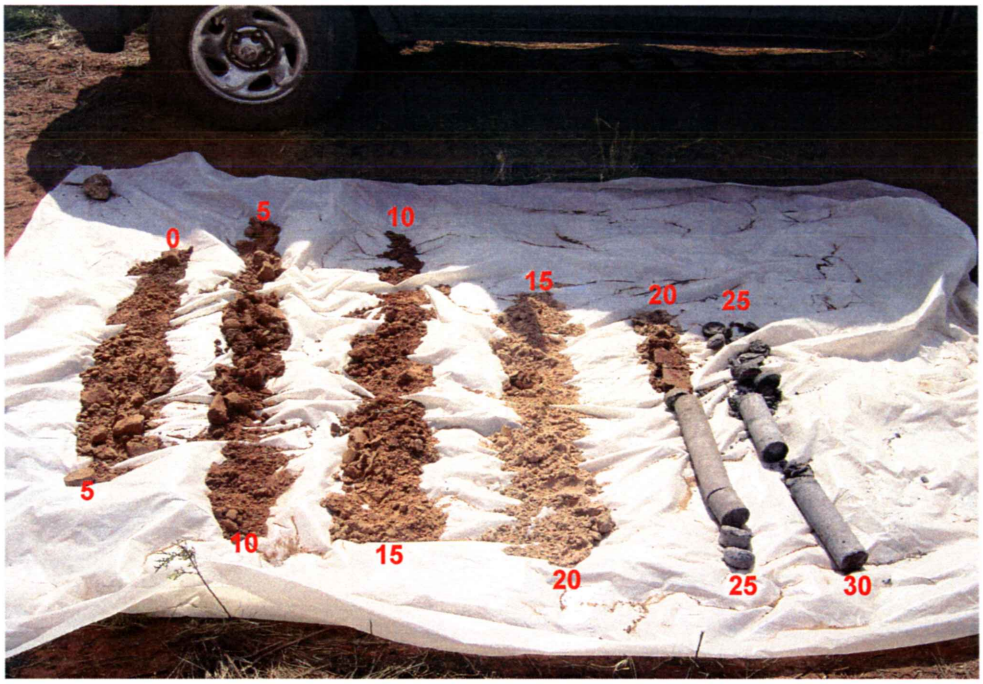


Photo 9 View of the lithology present at the location of monitor well MW-7 (with indicated depth intervals) located along the Colorado River. (photo date: 7/20/06)



Photo 10 View to the south of the lower seep area located in the tributary approximately 225 feet upstream of the Colorado River. (photo date: 7/16/06)



Photo 11 View of the lower seep area located in the tributary approximately 225 feet upstream of the Colorado River. (photo date: 7/16/06)



Photo 12 May 25, 2005 view to the north of the upper seep area located in the tributary approximately 600 feet upstream of the Colorado River. (photo date: 5/25/05)

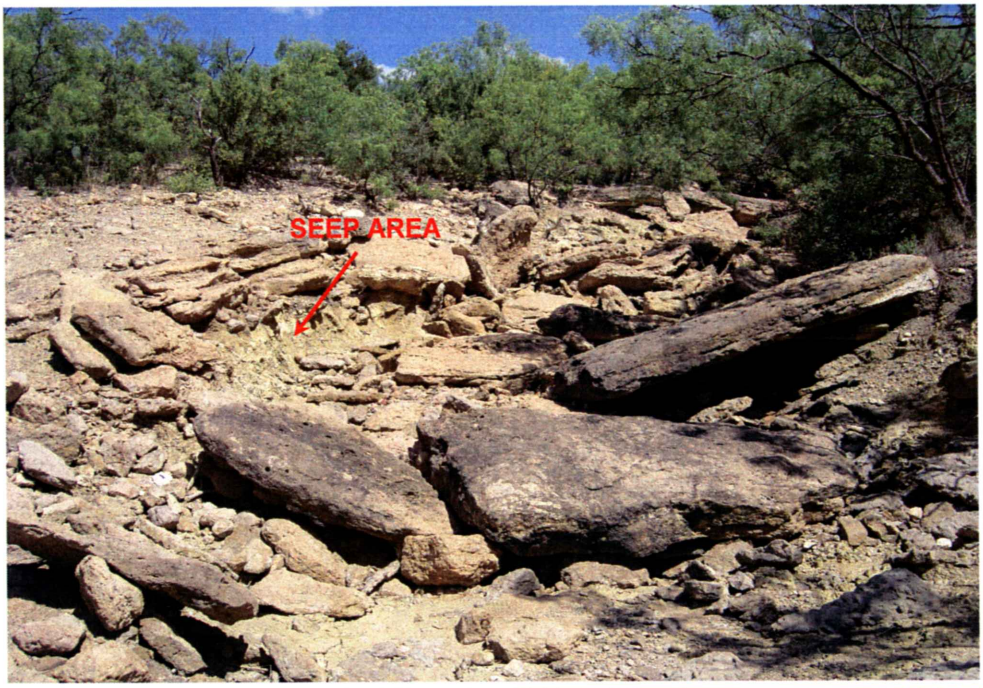


Photo 13 July 16, 2006 view to the south of the upper seep area indicating this area to be dry. (photo date: 7/16/06)



Photo 14 July 16, 2006 view to the south of the upper seep area indicating this area to be dry. (photo date: 7/16/06)



Photo 15 View of salt crystals located along the east bank of the tributary adjacent to the location of surface water sample SW-Trib-2 approximately 100 feet upstream of the Colorado River. (photo date: 8/21/06)



Photo 16 Typical view of former seep areas located between the Wolverton Well No. 1 and tributary. (photo date: 7/20/06)



Photo 17 View of former seep area located in the western branch of the tributary, west of monitor well MW-3. (photo date: 7/21/06)

Photo Page 7
Ballinger Seep
Ballinger, Runnels County, Texas
Terracon Project No. 94057272

Terracon

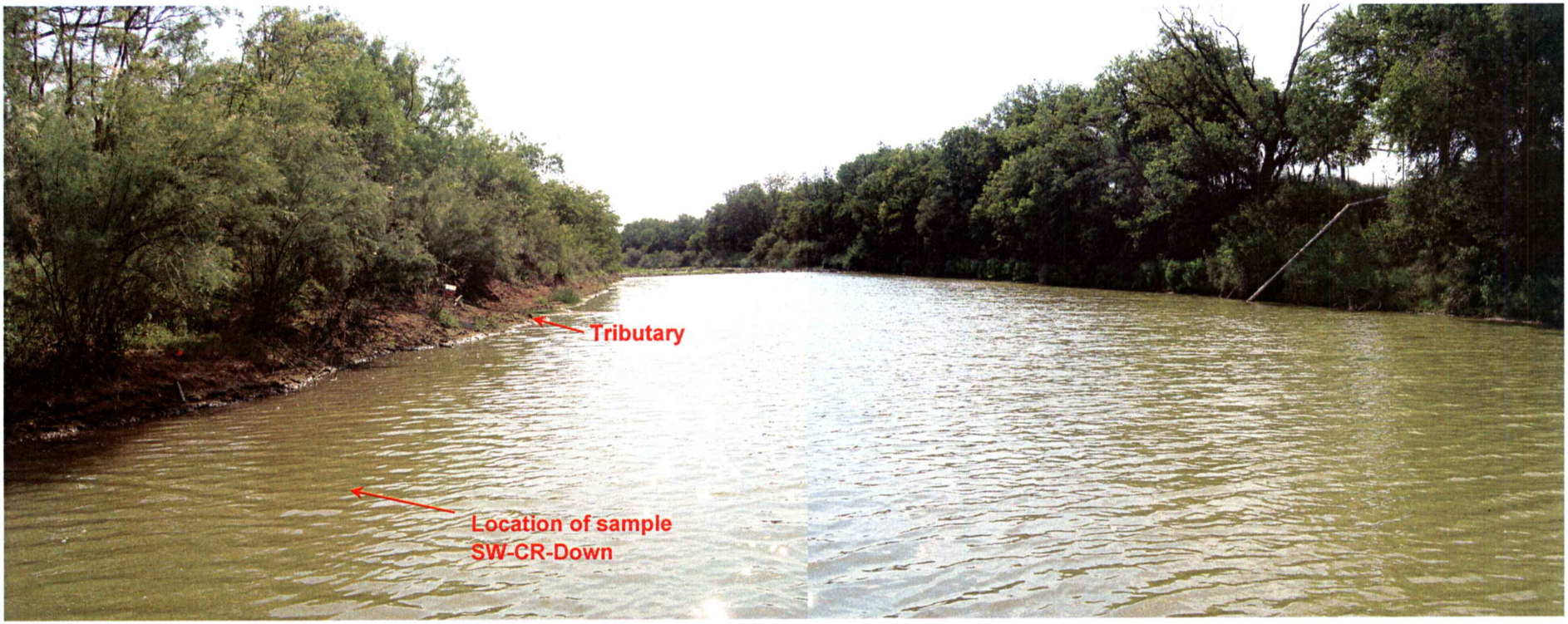


Photo 18 View of the Colorado River (from downstream of its confluence with the tributary) looking west (upstream). Note the lack of vegetation along the southern bank of the river (seep side). (photo date: 7/20/06)

Photo Page 8

Ballinger Seep

Ballinger, Runnels County, Texas

Terracon Project No. 94057272

Terracon



Photo 19 April 23, 2007 view to the south of the upper seep indicating it to be active at the surface near monitor well MW-3. (photo date: 4/23/07)



Photo 20 April 23, 2007 view to the south of the upper seep discharging into the tributary near monitor well MW-3. (photo date: 4/23/07)



Photo 21 April 23, 2007 view to the north of the upper seep discharging into the tributary near monitor well MW-3. (photo date: 4/23/07)



Photo 22 April 23, 2007 view to the north of the tributary flowing into the Colorado River. (photo date: 4/23/07)



Photo 23 View to the northeast of the installation of monitor well MW-10 located northeast of MW-5. (photo date: 4/24/07)



Photo 24 View to the northeast of the installation of monitor well MW-11 located adjacent to another potential source area (Pan American Petroleum Corp. Well No. 1) at the site. (photo date: 4/25/07)

Attachment B

Final Comprehensive Report Wendkirk Oil Field, Upper Colorado River Segment 1426, Coke County, Texas

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August 28, 2008

Mr. Bill Renfro
Railroad Commission of Texas
1701 North Congress Avenue
Austin, Texas 78701

Re: Final Comprehensive Report, Upper Colorado River Segment 1426 Between E. V. Spence Reservoir and O. H. Ivie Reservoir, Wendkirk Oil Field, Coke County, Texas

Dear Mr. Renfro:

The attached Final Comprehensive Report presents a summary of the activities completed during the Section 319 Non-Point Source (NPS) grant for investigation and remediation/abatement of oil-field related saltwater impacts in the Upper Colorado River between E. V. Spence Reservoir and O. H. Ivie Reservoir in Coke and Runnels Counties (Texas Surface Water Segment 1426).

Please do not hesitate to contact me at 512-684-3137 regarding questions or comments.

Sincerely,

Arsin M. Sahba, P.G.
Senior Project Manager/Senior Geologist

cc: Heidi Bojes, RRC, Austin, Texas
Dan O'Donnell, RRC, Austin, Texas
Brian Floyd, RRC District 7C, San Angelo, Texas
Jason Leik, P. E., TRC, Austin, Texas

Enclosure



Final Comprehensive Report

Wendkirk Oil Field
Upper Colorado River Segment
1426
Coke County, Texas

Prepared for:

Railroad Commission of Texas
Oil and Gas Division
Site Remediation and Special Response

William B. Miertschin, Assistant Director

Prepared by:

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505 East Huntland Drive, Suite 250
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Mark A. Robbins, Project Manager

August 2008

Final Comprehensive Report

Wendkirk Oil Field
Upper Colorado River Segment 1426
Coke County, Texas

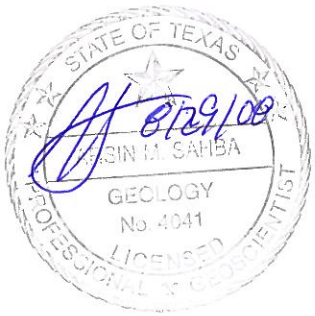
Prepared for:

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TRC Project No. 161638

Principal Lead _____ **Technical Lead** _____

August 2008

Final Comprehensive Report

Wendkirk Oil Field
Upper Colorado River Segment 1426
Coke County, Texas

Prepared for:

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1.0 INTRODUCTION

This Final Comprehensive Report presents a summary of the activities completed during the Section 319 Non-Point Source (NPS) grant for investigation and remediation/abatement of oil-field related saltwater impacts in the Upper Colorado River downstream from E. V. Spence Reservoir (Texas Surface Water Segment 1426).

The Total Maximum Daily Load (TMDL) Section of the Texas Commission on Environmental Quality (TCEQ) placed Segment 1426 of the Upper Colorado River, between E. V. Spence Reservoir and O. H. Ivie Reservoir in Coke and Runnels Counties, on the State's 303(d) list because it did not meet the water quality standards for total dissolved solids (TDS) and chloride.

As part of the TCEQ TMDL project, an airborne geophysical survey of Segment 1426 was conducted by the University of Texas, Bureau of Economic Geology (BEG), for the TCEQ. The survey indicated four areas of elevated ground conductivity along the Upper Colorado River. The most upstream area, referred to as the Machae Creek Area, was the focus of this study. Within the Machae Creek Area, the Colorado River is 17 kilometers long and has several intermittent tributaries. The Wendkirk Oil Field is located at the downstream extent of the Machae Creek Area as illustrated in Figure 1.

The Railroad Commission of Texas (RRC), Oil and Gas Division, received a Section 319 NPS grant from the United States Environmental Protection Agency (USEPA) through the TCEQ to determine if oil and gas operations in the Wendkirk Oil Field are contributing to the high saline water in the Colorado River. The objective of the grant was to assess and determine the source(s) leading to the elevated salinity in the Machae Creek Area of the Colorado River, develop best management practices (BMPs) to reduce salinity, and implement the BMPs.

The following sections discuss the site investigations, feasibility study/BMP selection, BMP design, BMP implementation, and an evaluation of BMP effectiveness.

2.0 SITE INVESTIGATION

Geophysical investigations were completed by the BEG from July 2004 to March 2005 and October to November 2006. TRC conducted a records review and site investigation activities between December 2005 and April 2007. The objective of the site investigations were to identify sources and delineate the extent of salinity that is impacting the Colorado River. A summary of the BEG and TRC investigation activities and results are presented below.

2.1 BEG Airborne Geophysical Investigation

At the request of the TCEQ, the BEG conducted airborne electromagnetic (EM) and ground-based EM geophysical surveys. The geophysical investigation methods and results were presented in the *Geophysical Investigation of Salinization Along the Upper Colorado River Between Lake Thomas and Ivie Reservoir, Texas,* revised January 2006. A summary of the conclusions presented in the January 2006 report are provided below:

- Airborne and ground-based EM geophysical surveys identified four high-conductivity segments (i.e., Machae Creek, Maverick, Bull Hollow and Valley Creek) along the Colorado River between the E. V. Spence Reservoir and O. H. Ivie Reservoir (Segment 1426). The highest conductivity values were observed in the Machae Creek Area.
- These four high-conductivity segments are characterized by dominant baseflow contributions, which elevate the salinity load of the river.
- Segments along the Upper Colorado River receive significant natural salinity contributions from local and regional dissolution of Permian sulfate-bearing minerals.
- Data suggests that the Maverick and Valley Creek segments are receiving relatively sulfate-rich discharges that likely represent dominant baseflow contributions from naturally dissolving evaporite deposits.
- The Machae Creek Area located immediately downstream of Spence Reservoir also receives chloride-enriched baseflow and/or surface contributions, most likely from brine once produced in local oil fields.

2.2 Records Review and Site Reconnaissance

A records review and site reconnaissance was completed by TRC between December 2005 and April 2006 to gather and review available data about the project area, conduct a site reconnaissance, and provide recommendations to support

development of a work scope for additional investigation activities. The results were presented in the memorandum *Final – Wendkirk Oil Field Records Review, Site Reconnaissance Results, and Recommendations* submitted by TRC to the RRC on April 20, 2006. The results of the records review and site reconnaissance indicated further investigation activities of the Machae Creek Area, including the Wendkirk Oil Field, were warranted.

2.3 Phase II Investigation

After completing the records review and site reconnaissance, TRC conducted a Phase II field investigation of surface water and groundwater. The results of the airborne/ground-based geophysical survey, records review, and site reconnaissance activities were used to guide the Phase II investigation activities. The investigation activities were conducted in accordance with the work plans and Quality Assurance Project Plans (QAPPs) submitted by the RRC to the TCEQ and USEPA between September 2005 and February 2007. The results of the field investigation were presented in the *Phase II Investigation Report, Wendkirk Oil Field Phase II Investigation, Coke County, Texas* dated August 2007. Deviations from the work plan(s) and/or QAPP(s) were documented in the investigation report. Based on a review of the data, it was determined that the deviations from the work plans and/or QAPPs did not affect the validity of the data.

2.3.1 Seasonal Water Monitoring

Seasonal water monitoring consisted of collecting stream flow measurements along the Colorado River, sampling surface water along the Colorado River, sampling surface water from other locations (i.e., creeks, quarry pond, seeps, and springs), sampling water wells in the Wendkirk Oil Field area, and investigating the area north of Colorado River Segments 7 and 8 as a potential source area for the elevated chloride concentrations. A summary of the seasonal sample locations, sample identifications, sample dates, and analytical tests/methods are presented in Table 1.

During each seasonal monitoring event, stream flow was measured at two specific points located upstream and downstream of the Machae Creek Area. River gauging stations were installed along Colorado River Segments 13, 14, and 15 to determine the elevation of the river stage. Table 2 presents the river gauging information including top of measuring point elevation, stream level measurement (date of measurement, depth to water), and calculated water elevation.

Surface water samples were collected along the Colorado River beginning with Segment 3 and then approximately every kilometer from Segments 7 through 15. Two

surface water samples were collected at different locations along Segment 17 because Segment 16 was not accessible. Additionally, surface water samples were collected from creeks, springs, seeps, and ponds near the Wendkirk Oil Field. During certain seasonal sampling events, samples could not be collected from all of the surface water features due to the lack of water in some of the creeks and springs. Seasonal surface water sample locations in the vicinity of the Wendkirk Oil Field are depicted in Figure 2.

Several water wells located near the Wendkirk Oil Field were sampled during seasonal sampling events. The water well locations are presented in Figure 2. Three water wells (Mays-01, Milford-01, and Milford-02) located within or near the Wendkirk Oil Field were found while conducting file reviews or field investigation activities. These three wells were surveyed, gauged for depth to groundwater, and added to the seasonal water sampling list. The groundwater data collected from the water wells were used in conjunction with data collected from the monitoring wells to determine the groundwater flow direction and gradient.

A summary of the seasonal sampling results including the sample identification, description of sample location, and laboratory analytical results are presented in Table 3.

2.3.2 Groundwater Investigation

Nine groundwater monitoring wells (MW-01 through MW-09) were installed during August 2006. An additional nine monitoring wells (MW-10 through MW-18) were installed in April 2007. The locations of the wells installed in April 2007 were determined based on the results of the first groundwater investigation and the additional BEG geophysical investigation (discussed below) that was completed in October/November 2006. The wells were installed using a combination hollow stem auger and air rotary drilling rig. The monitoring well locations are presented in Figure 2.

Groundwater level measurements were collected from the monitoring wells and water wells using a water level meter on August 30, 2006, October 26, 2006, and April 20, 2007. Table 2 presents the monitoring well gauging data including ground elevation, top of well casing elevation, water level measurement (date of measurement, depth to water, and total depth), and calculated water elevation. These data were used to determine the groundwater flow direction and gradient. The groundwater potentiometric map for the April 20, 2007, gauging event is presented as Figure 3.

Groundwater samples were collected from the monitoring wells in August 2006 and April 2007. A summary of the groundwater sample results including the sample identification, description of the sample location, and laboratory analytical results are

presented in Table 3. Chloride concentrations for the August 2006 and April 2007 sampling events are presented on Figure 5.

2.3.3 Produced Water Sampling

A water sample (P-T-01) was collected from the saltwater disposal facility (SWDF) Salmon #1 SWD 06788 located in the Wendkirk Oil Field. The location of the SWDF is depicted in Figure 2. The analytical results from produced water collected from the aboveground storage tanks at the Salmon #1 SWDF are presented in Table 3.

The SWDF collects produced water from a few remaining oil wells that operate in the Wendkirk Oil Field. The water is disposed via the injection well located immediately northwest of the disposal facility tank battery. A review of RRC files determined that current oil production in the Wendkirk Oil Field is from the Wendland Cross Cut and the Wendkirk Cisco formations. The SWDF analytical results indicated elevated concentrations of calcium, chloride, sodium, and TDS. The majority of the TDS concentration (138,000 mg/L) for the produced water sample was compromised of chlorides (89,900 mg/L) and sodium (38,300 mg/L). Based on the produced water analytical results, water samples collected in the Wendkirk Oil Field area with elevated chloride and sodium concentrations likely indicate sources from oil and gas activities.

2.3.4 Ground-Based Geophysical Investigation

The BEG conducted borehole and surface geophysical surveys in October/November 2006 in the Wendkirk Oil Field area. The additional geophysical investigation activities were completed to define the lateral and vertical extent and possible sources (e.g., improperly abandoned oil wells, oil field disposal pits, etc.) of groundwater salinization that were inferred from the initial geophysical surveys. The October/November 2006 geophysical survey results were presented in the *Surface and Borehole Geophysical Investigations in the Wendkirk Oil Field Area* revised January 2007. The results from the ground-based geophysical survey were used to determine the locations and depths of monitoring wells MW-10 through MW-18 completed in April 2007.

2.3.5 Phase II Site Investigation Conclusions and Recommendations

A summary of the conclusions and recommendations included in the Phase II investigation report are presented below:

- Stream flow measurements indicate the Colorado River may fluctuate from a gaining stream to a losing stream. Data collected during April 2007 were used to evaluate what portions of the Colorado River are gaining versus losing. The Colorado River appeared to be a gaining stream between Segments 13

and 15 based on a comparison of groundwater elevations from monitoring wells MW-18 and MW-11 and surface water elevations from river gauging stations RG-01 and RG-02. The Colorado River appeared to change to a losing stream along Segment 15 based on a comparison of the groundwater elevation at monitoring well MW-07 to river gauging station RG-03. The groundwater elevations at water wells Milford-01 and Milford-02 indicate that the Colorado River appears to return to a gaining stream along Segment 16.

- Groundwater on the south side of the Colorado River within the Wendkirk Oil Field flows towards the river in a north-northwest direction with a hydraulic gradient of 0.005 feet per feet (ft/ft) based on data from April 2007. Data is limited on the north side of the Colorado River; therefore, the groundwater flow direction and gradient could not be determined.

- Surface water samples collected along the Colorado River provide no indication of specific source(s) of salinity located near the river. Salinity concentrations begin to increase after Segment 7 and continue to slowly rise through Segment 18.

- Elevated salinity observed near spring 4314102 suggests the potential for oil and gas impact at the western discharge point of the spring, especially due to the higher ratio of sodium and chloride versus calcium and sulfate. Additionally, elevated salinity was observed at monitoring wells MW-01 and MW-03 located southwest and east of the spring, respectively. The elevated salinity at spring 4314102 and monitoring wells MW-01 and MW-03 suggests the area is hydraulically connected.

- The results of the BEG's geophysical survey (lateral ground-conductivity transects, borehole gamma and conductivity logs, and time-domain EM soundings [TDEM]) were used to define the lateral and vertical extent of shallow salinization in the Wendkirk Oil Field area. The ground-conductivity transects helped determine the lateral extent of elevated salinity, which was then used to determine locations and depths of monitoring wells installed during April 2007. The ground-conductivity transects were effective in locating areas (i.e., monitoring wells MW-10, MW-12, and MW-18) with elevated salinity in groundwater. Vertical delineation of salinity using the TDEM soundings identified a shallow conductive layer with an upper boundary at or above the Colorado River elevation that is present across the oil-field area. This layer represents an upper saline groundwater zone that has a strong oilfield salinity component based on water analyses, borehole logs,

and lateral conductivity transects. TDEM soundings also identified a deeper conductive, saline zone that is likely due to natural salinity sources. This deeper zone is below the Colorado River elevation and is not a likely contributor to elevated salinity in the Colorado River.

- Elevated salinity was observed in groundwater across the Wendkirk Oil Field area. The highest concentrations were observed south of the Colorado River beginning at monitoring well MW-18 and continuing northeast to MW-12, Mays-01 water well, MW-05, MW-10, and MW-11. Chloride-to-sulfate ratios for the April 2007 data vary from 3.2 at MW-12 to 17.2 at Mays-01. The chloride-to-sulfate ratios north of the Colorado River vary from 0.1 at Milford-02 water well to 1.0 at MW-08. The elevated sulfate concentrations north of the Colorado River appear to be from dissolution of gypsum present in the San Angelo Formation.

- Based on the groundwater flow direction and groundwater analytical results, groundwater is likely contributing elevated salinity into the Colorado River, primarily between Segments 13 and 15.

- Elevated concentrations of calcium, chloride, sodium, and sulfate, as well as the highest chloride-to-sulfate ratios were observed at the Mays-01 water well. These data suggest that the Mays-01 water well was potentially used as a disposal well or there is a nearby source area associated with historical oil and gas production activities. Another possibility is that the water well was converted from a former oil well that intersected the Coleman Junction formation. Groundwater parameters collected at Mays-01 water well indicated pH levels lower than other wells sampled in the area. Water located in the Coleman Junction formation is known to be corrosive (i.e., lower pH levels), thus the lower pH values observed in the Mays-01 water well may indicate the well is being impacted by the Coleman Junction formation.

After completion of the Phase II investigation, it was determined that additional information was required to fill data gaps required to properly evaluate potential groundwater remedy options (i.e., BMPs).

3.0 ENGINEERING DESIGN FIELD ACTIVITIES

Additional information was obtained from the Wendkirk Oil Field area by completing soil borings, installing monitoring/observation wells, performing aquifer tests, and investigating the Mays-01 water well. These activities were performed by TRC between June and August 2007. A summary of the engineering field design activities and results are presented below.

Soil boring LB-01 was completed north of the Colorado River across from monitoring well MW-18 as presented in Figure 2. Based on the lithology at soil boring LB-01 and monitoring wells MW-12, MW-14, and MW-18, it was concluded that the claystone present on the western portion of the site functions as a confining layer, preventing highly saline groundwater from influencing the Colorado River in this portion of the study area.

Monitoring wells MW-19 and MW-20 and observation well OW-1 were installed in the vicinity of the Mays-01 water well during July 2007. Monitoring wells MW-19 and MW-20 were installed to delineate salinity and evaluate potential source areas south (upgradient) of the Mays-01 water well. Observation well OW-1 was installed next to the Mays-01 water well for aquifer testing and sampling. The July 2007 analytical results from wells MW-19 and MW-20 indicated chloride concentrations increased to the north toward the Mays-01 water well (1,720 mg/L at MW-20 to 14,100 mg/L at MW-19). The chloride concentration at the Mays-01 water well during June 2007 was 36,000 mg/L. Based on the groundwater analytical results, the area around the Mays-01 water well remained the main focus as a potential source of elevated salinity concentrations in groundwater.

During June and July 2007, step-drawdown tests were performed at eight monitoring wells. Only one well, MW-10, produced usable data to estimate specific capacity. The screened interval of this well is in the sandstone bedrock at 60 to 70 ft bgs, which is much deeper than the bottom of the Colorado River. The remaining wells, which are either screened in the alluvium or the sandstone bedrock, pumped dry at a flow rate of approximately 0.5 gallons per minute (gpm).

Slug tests were performed on wells MW-05, MW-11, MW-13, and OW-01. The slug test data indicated an average hydraulic conductivity (K) of 2.4×10^{-4} centimeters per second (cm/s). Using the calculated average hydraulic conductivity, the hydraulic gradient (i) of 0.012 ft/ft calculated between the Mays-01 water well and monitoring well MW-05, and a default porosity (n) of 0.3, the groundwater velocity (V) was calculated to be 13.7 feet per year (ft/year).

The Mays-01 water well construction was investigated using down-hole geophysical logging techniques (i.e., caliper test, resistivity, and gamma) and a down-hole camera. The camera log and well construction materials exposed at the surface revealed the well was constructed of 5-inch diameter Schedule 80 polyvinyl chloride (PVC) pipe with hand-cut screen slots. The well was completed within a 13.25-inch diameter steel surface casing. The screened interval extended from 67 feet bgs to approximately 90 feet bgs with the upper portion of the slots completed in the steel casing. The sand pack of the well appeared to be pea gravel and does not extend to the top of the screened interval. The slots near the bottom of the screen interval showed heavy mineralization. The bottom of the well was filled with debris, a result of the well not having a well cap. The well had approximately 89 feet of blank pipe below the screened interval. This logging did not reveal the total construction depth of the Mays-01 water well due to the debris in the bottom on the well. To assist in determining if a deeper source (e.g., the Coleman Junction formation) was impacting the Mays-01 water well, discrete groundwater samples were collected at two intervals (65 and 95 feet bgs) within the Mays-01 water well. Analytical data did not indicate any significant difference in concentrations between these two depths. Data collected from the investigation of the Mays-01 water well was inconclusive in determining if the Mays-01 water well is a conduit for saline impacts from the deeper Coleman Junction formation.

The results of the investigation and engineering field design activities led to the recommendation to conduct a feasibility study of BMPs to abate the high salinity water emanating from the Wendkirk Oil Field into the Colorado River.

4.0 FEASIBILITY STUDY / BMP SELECTION

The objective of the feasibility study was to use the results of previous investigations to develop remedies (i.e., BMPs) to abate the high salinity water emanating from the Wendkirk Oil Field into the Colorado River. The scope of this feasibility study was restricted to the Wendkirk Oil Field within the Machae Creek Area of the Colorado River.

The feasibility study considered alternatives for addressing the saline-impacted water including containment, recovery, in-situ treatment, ex-situ treatment, and disposal. The feasibility study evaluated the BMPs based on effectiveness, implementability, regulatory agency and stakeholder acceptance, and cost of these options to meet the objective. The feasibility study included a conceptual site model, alternatives for salinity abatement, design alternatives, and the recommended solution.

4.1 Conceptual Site Model

A conceptual site model was developed to define the physical setting in which the saline-impacted water is present and migrates, and is critical to designing the most effective remedy. The conceptual site model included a description of the geology/hydrogeology, chemicals of concern, potential sources of salinity, and pathways for migration of saline-impacted water.

Elevated salinity was observed in groundwater in the Wendkirk Oil Field area. The Coleman Junction formation, a limestone and shale formation of the Permian Wichita-Albany Group, is an artesian brine-bearing unit occurring at depths of approximately 2,500 feet that is commonly cited as a principal source of near-surface brine.

Elevated concentrations of calcium, chloride, sodium, and sulfate, as well as the highest chloride-to-sulfate ratios were observed at the Mays-01 water well resulting in the follow hypotheses: (1) the Mays-01 water well was used as a disposal well; (2) the Mays-01 water well was a former oil well that intersects the Coleman Junction formation and was converted to a water well; or (3) there is a source area near the Mays-01 water well associated with historical oil and gas production activities. Groundwater parameters collected at Mays-01 water well indicated pH levels lower than the other wells sampled in the area. The lower pH values observed in the Mays-01 water well might indicate the well is impacted by the Coleman Junction formation, which is known to contain highly corrosive water (i.e., low pH). However, none of these theories could be confirmed during the feasibility study.

4.2 Alternatives for Salinity Abatement

TRC evaluated available recovery, treatment, and disposal methods for saline-impacted groundwater. The following discussion reviews the technologies based on the following criteria:

- Effectiveness
- Implementability
- Regulatory agency and stakeholder acceptance
- Cost

Technologies were reviewed for potential application to the Wendkirk Oil Field project. Many technologies are available for the treatment of saline-impacted water. However, there are no industry standard in-situ treatments for the remediation of saline groundwater. Each treatment technology scenario that was reviewed involves the collection and ex-situ disposal of groundwater. The recovery options and treatment /disposal options are listed below.

Recovery Options:

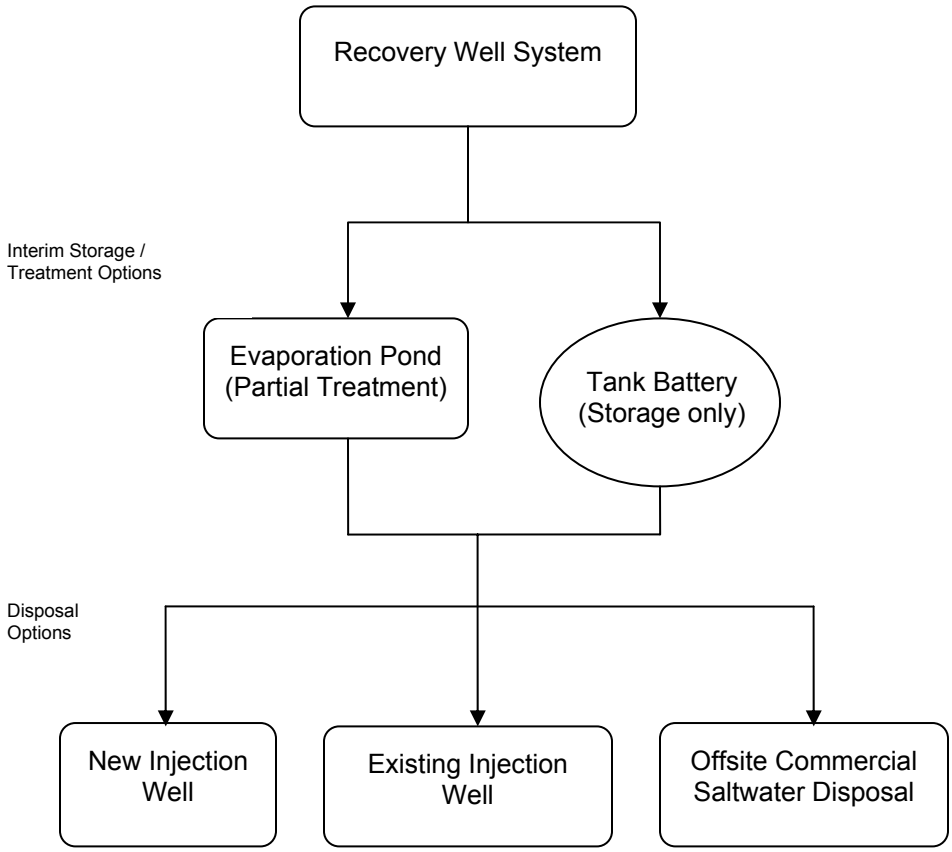
- Recovery Wells – Moderate effectiveness and best suited for deeper groundwater applications (i.e., Wendkirk Oil Field).
- Recovery Trench – Moderate to high effectiveness but best suited for shallower groundwater applications.
- Halophytic Vegetation – Low effectiveness and difficult to implement.

Treatment and Disposal Options:

- Evaporation Ponds – High construction and operation and maintenance (O&M) costs, as well as land owner agreement issues.
- Desalination – Very high cost.
- Disposal Well – Variable cost depending on availability of commercial versus private wells.

4.3 Design Alternatives

Based on the remedial objective, conceptual site model, and an evaluation of the technologies for groundwater recovery, storage, evaporation, and disposal, the basic recommended design is shown in the flow chart below.



The advantages of installing a tank battery are the simplicity of design and construction, using a well-known, widely available, and non-intrusive technology that is not likely to receive opposition from land owners in the area. The disadvantage of this option is the entire volume of recovered water will need to be routed for disposal. Although an evaporation pond reduces the volume of water that needs to be injected, the disadvantages include a large area of land necessary for effective evaporation, O&M, and sludge/sediment disposal.

Advantages for offsite commercial disposal are the simplicity of implementation, the low cost of saltwater disposal, lack of dependence on a local operator, and proximity to the commercial saltwater disposal facility. The disadvantage of constructing a new injection well is the high cost of capital expenditures. The disadvantage of using an existing injection well is that the operator can specify a maximum capacity that can be received, which would make the recovery system operation dependant on the operator's injection system.

4.4 Recommended BMPs

The following recommendations are the result of the feasibility study that evaluated several BMPs to reduce salinity from the Wendkirk Oil Field impacting the Colorado River.

- Although data collected at the Mays-01 water well was inconclusive, this well should be plugged to prevent any potential influence from deeper formations.
- Install six groundwater recovery wells in the vicinity of the Mays-01 water well, which is the area of highest salinity in groundwater.
- Install a tank battery for temporary storage of recovered groundwater before treatment at the evaporation pond.
- Construct an evaporation pond in the vicinity of monitoring well MW-17 for treatment of the recovered groundwater.

An alternate option to the evaporation pond would be the temporary storage of recovered groundwater in a tank battery and off-site disposal at a commercial saltwater disposal facility.

5.0 BMP DESIGN

5.1 Modeling

The first step of the design process was development of a numerical simulation (model) of the aquifer in the vicinity of the Mays-01 water well and Colorado River. The model was used to determine the locations, pumping rates, and pump intake elevations of the recovery wells. TRC used Visual MODFLOW Pro (Version 3.1) to create a steady-state model that consisted of two layers to simulate the two different water bearing units (alluvium and sandstone). A river boundary condition was added along the path of the Colorado River, with constant head (upgradient) and no flow boundaries (crossgradient) added at the model zone boundaries in accordance with observed field conditions.

The model was calibrated using water levels measured during the sampling event performed in April 2007, as well as observations from the step-drawdown tests performed in June and July 2007 at wells MW-10 and OW-01. Once the model results correlated with the observed data within an acceptable tolerance, a sensitivity analysis was performed on hydraulic conductivity, effective porosity, specific yield, source concentration, and longitudinal, transverse, and vertical dispersivity. This sensitivity analysis allowed final selection of the model variables.

The model was run in both steady state and transient modes to predict the hydraulic effects of pumping (radius of capture) and capture of the chloride plume over time. The location, design parameters, and pumping rate of the recovery wells was optimized using the model to achieve the most effective horizontal and vertical capture of the chloride plume. The final well configuration was six recovery wells in a semi-circle configuration, with each proposed recovery well pumping at an approximate rate of 0.7 gpm.

5.2 Design

Once the recovery well specifications were determined, the preliminary design (80-percent) was prepared. The design included alternative locations for the tank battery, as well as the potential to pipe the recovery wells directly to a nearby commercial injection well. Head-loss through the piping and manifold was calculated and preliminary pump specifications were determined. The initial design assumed alternating current (AC) power would not be available so solar powered pumps were specified.

After RRC review, the design alternative of routing recovered water to a commercial injection well was removed, and the design proceeded assuming a tank battery would be used to collect recovered water. As landowner input had not been received, several locations were considered for the tank battery as follows: (1) near the

county road at the edge of the property to eliminate on-site traffic, (2) between the Mays-01 water well and the county road to reduce traffic on the property, and (3) near the recovery wells with a remote discharge line running to either the county road or another remote loading point. Hydraulic calculations and costs were generated for each alternative. These tank battery locations were surveyed, and during the survey, an overhead power line was observed. Based on the proximity of the power line to the Mays-01 water well and the cost associated with providing climate control for a solar battery array, the solar system was replaced with an AC system to complete the 90-percent design. TRC also evaluated the feasibility of installing a new access road in order to avoid disturbance of the landowner's residences.

The 90-percent design was presented to the land owner. Based on his review, a final location for the tank battery was selected near the Mays-01 water well. The RRC directed TRC to complete the 100-percent design plans, specifications, and cost estimate. Negotiations with the landowner concerning access routing are ongoing.

6.0 BMP IMPLEMENTATION

The RRC chose two BMPs to diminish the salt load flowing directly into the Colorado River during the gaining periods of the river. In order to abate the load in the most effective manner, the area within the Wendkirk Oil Field that, by investigation, demonstrated the highest levels of oil field brine salinity (20,000 to 35,000 mg/L chlorides) was chosen as the area of focus. The two BMPs that were chosen were:

- A recovery well system and tank battery for storage and disposal of the high saline groundwater pumped from the recovery wells.
- The plugging of the Mays-01 water well that appeared to have been converted from an oil well and plugged back to a freshwater zone.

TRC submitted the 100-percent Engineering Design for a recovery well system located in a downgradient direction between the Mays-01 water well and the Colorado River, and a tank battery for storage of the recovered water. The design was created under the assumption that the Mays-01 water well was the source or one of the sources of the high salinity. Implementation of the recovery well system depended on the following: (1) successful negotiations with the landowner concerning access routing, and (2) confirmation that the Mays-01 water well was a source of the high salinity in the groundwater. Due to the dependency of BMP implementation on time-consuming procedures and due to the lack of sufficient funds remaining in the Downstream NPS Grant, the recovery well system BMP could not be implemented during the life of the grant.

The Mays-01 water well was suspected to be a converted oil well that had been plugged back for use as a water well. During plugging of the well by the RRC on July 9, 2008, it was discovered that the total depth of the original well bore was 179 feet. The water well was re-entered through the 5 ½ inch PVC pipe (casing) to make certain that the original well bore would not be missed. The new hole was drilled from 179 to 190 feet to demonstrate that the Mays-01 water well was installed as a water well and was not a converted oil well. An 11-inch bit was used to drill out the Mays-01 water well to a depth of 190 feet. The well bore was then filled with cement from total depth to the surface. There was no sign of saltwater flow during the plugging of the Mays-01 water well, and it was established that the total depth of the well was not sufficient to provide a conduit from the pressurized Coleman Junction Formation, which contains predominantly high sodium/chloride water, and which is found at a depth of approximately 2,500 feet. The Mays-01 water well did not appear to be a source of the saline water. Monitoring for a period of time will verify whether or not the Mays-01 water well was providing an

avenue for the contamination to travel into the groundwater or was itself reflecting groundwater impact from another source.

A future BMP consisting of a recovery well system will most likely necessitate a modification of the existing 100-percent Engineering Design.

7.0 BMP EVALUATION

Two BMPs were selected to reduce the TDS and chloride loading into the Colorado River from the Wendkirk Oil Field: (1) groundwater recovery system and (2) plugging of the Mays-01 water well. At this time, only the second BMP (i.e., plugging of the Mays-01 water well) has been completed. The effectiveness of this BMP is being evaluated by periodic sampling of the monitoring wells near the Mays-01 water well. If the Mays-01 water well was a source area, then concentration reductions in the nearby monitoring wells will not be observed until the chloride plume has migrated from the former source area to the monitoring wells. Based on an approximate groundwater velocity of 14 feet/year, it is estimated that concentration reductions will be observed in OW-1 (15 feet from Mays-01) and MW-5 (600 feet from Mays-01) in 1 and 43 years, respectively.

A synoptic well gauging of monitoring wells MW-01 to MW-20, observation well OW-01, water well Milford-02, and two river gauging stations was conducted in August 2008. River gauging station RG-1 was damaged, therefore a measurement was not collected from that location. The fluid level measurements are presented in Table 2 and the groundwater potentiometric map for August 2008 is presented as Figure 4.

Groundwater samples were collected in July and August 2008 to evaluate the effectiveness of the BMP (plugging of the Mays-01 water well), as well as document the salinity concentrations in the Wendkirk Oil Field area. The laboratory analytical data are provided in Appendix A and quality assurance (QA) evaluation of the data is provided in Appendix B. The July 2008 sampling event occurred while the Mays-01 water well was undergoing plugging activities, and consisted of groundwater sampling MW-5, MW-10, MW-11, MW-12, and MW-17. During August 2008, groundwater samples were collected from all 21 monitoring/observation wells, water well Milford-02, water well 4313302, and water well Mays-02 (sample identification W-WW-081), which was previously not identified at the site. The Mays-02 water well was found in July 2008 and is located between monitoring wells MW-18 and MW-20 as depicted Figure 4. A summary of the groundwater analytical results are presented in Table 3. The historical chloride groundwater analytical results for each well are presented in Figure 5.

The groundwater potentiometric maps for April 2007 and August 2008 are generally similar in that groundwater flow is towards the Colorado River. The groundwater potentiometric maps are presented as Figures 3 and 4. South of the Colorado River, groundwater flow is to the northwest towards the river. North of the Colorado River, groundwater flow is to the southeast towards the river. The notable differences between the two maps are the groundwater mounds observed at monitoring

wells MW-16 and MW-20 on August 2008. The mounds may indicate the presence of a localized groundwater recharge source in these areas, possibly from upward flow associated with the Coleman Junction.

The July and August 2008 analytical results were relatively similar compared to previous sampling events. Chloride concentrations have ranged from 945 mg/L to 1,720 mg/L at monitoring well MW-20, which indicates groundwater has not been impacted from oil field activities upgradient of MW-20. However, analytical results from the Mays-02 water well, located approximately 600 feet northwest (downgradient) of monitoring well MW-20, indicated the presence of elevated chloride (19,200 mg/L) concentrations. The difference in these concentrations indicates the potential presence of another source located between the Mays-01 water well and MW-20.

A trend analysis was performed on the wells located near the potential source area (i.e., Mays-01 water well) where the BMP was implemented; the results are presented in Graphs 1 through 9. The graphs compare the following analytical data: conductivity, TDS, chloride, sodium, and groundwater elevation. A brief discussion of the trends observed in the graphs is provided below.

- Upgradient monitoring wells MW-06, MW-17, MW-19, and MW-20: Concentrations of chloride, TDS, and sodium remained relatively constant. Minor groundwater elevation fluctuations were observed at wells MW-06 and MW-17. The increased groundwater elevation observed at well MW-20 may be attributed to slow recharge of the well after installation.

- Source area observation well OW-1: The TDS concentration decreased between July and August 2008. The groundwater elevation increased from July 2007 to July 2008, then decreased to August 2008. Observation well OW-1 is located approximately 15 feet south of the Mays-01 water well. Based on the decreases in groundwater elevation and TDS concentrations between July and August 2008, observation well OW-01 may have been influenced by the plugging of the Mays-01 water well during July 2008. No changes in chloride or sodium concentrations were observed between July and August 2008.

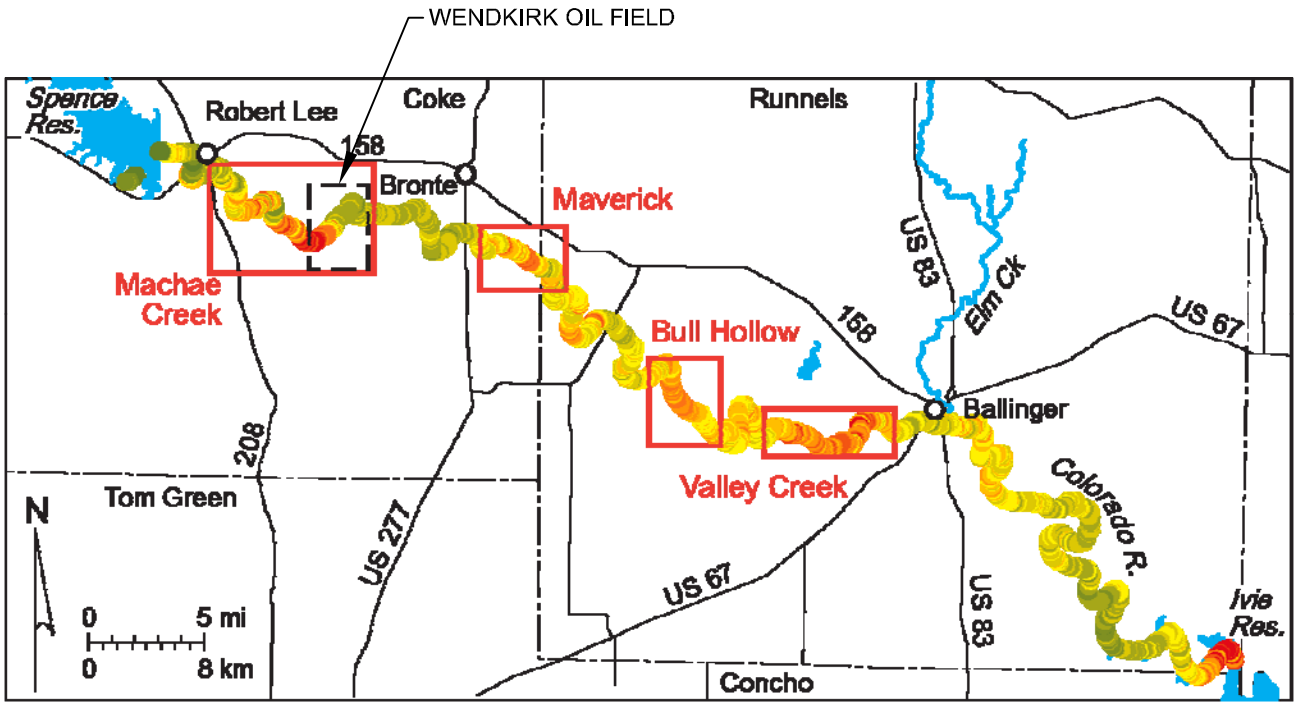
- Downgradient monitoring wells MW-05, MW-10, MW-11, and MW-12: Well MW-12 showed a slight increase in both groundwater elevation and TDS concentration, while sodium concentrations slightly decreased. The remaining wells showed little to no change in concentrations and groundwater elevations.

Based on a comparison of the July and August 2008 analytical results, the plugging of Mays-01 water well may have reduced salinity at OW-1 but not any farther downgradient. This would be expected based on OW-1 being within 15 feet (1 year travel time) of the Mays-01 water well. The next closest well, MW-5, is 600 feet (43 year travel time) from the Mays-01 water well.

8.0 CONCLUSION

As a result of the Section 319 NPS grant for investigation and remediation/abatement of saltwater impacts in the Upper Colorado River between E. V. Spence Reservoir and O. H. Ivie Reservoir (Texas Surface Water Segment 1426), the RRC has implemented a BMP to reduce TDS and chloride impacts in the Wendkirk Oil Field. Through site investigations, BMP selection, design, and implementation; the RRC has made progress towards the goals of the NPS grant to abate saltwater impacts from the Wendkirk Oil Field. Implementation of the second BMP has been delayed until source confirmation is made. The affect of plugging of the Mays-01 water well may have been observed at nearby well OW-1 but may not be observed at the other wells for many years. As a result, further monitoring is required to determine the effectiveness of the BMP.

FIGURES



Apparent conductivity at 1350 Hz, mS/m (standard deviation)

- 0 to 14 (< -1.75)
- 14 to 38 (-1.75 to -1.25)
- 38 to 63 (-1.25 to -0.75)
- 63 to 87 (-0.75 to -0.25)
- 87 to 112 (-0.25 to 0.25)
- 112 to 137 (0.25 to 0.75)
- 137 to 161 (0.75 to 1.25)
- 161 to 185 (1.25 to 1.75)
- 186 to 210 (1.75 to 2.25)
- 210 to 235 (2.25 to 2.75)
- 235 to 455 (> 2.75)
- Elevated conductivity area



NOTE:

APPARENT CONDUCTIVITY MEASURED AT 1350 Hz ALONG THE AXIS OF THE COLORADO RIVER DURING THE BEG AIRBORNE GEOPHYSICAL SURVEY IN FEBRUARY 2005. ELEVATED CONDUCTIVITY SEGMENTS INDICATING LOCATIONS OF POSSIBLE SALINE-WATER INFLOW ARE BOUNDED BY RED RECTANGULES. THE DASHED BOX NEAR BRONTE ENCLOSES THE WENDKIRK OIL FIELD.

SOURCE:

SURFACE AND BOREHOLE GEOPHYSICAL INVESTIGATIONS IN THE WENDKIRK OIL FIELD AREA, COKE COUNTY, TEXAS (BEG, 2006).

SITE LOCATION MAP

RAILROAD COMMISION OF TEXAS
WENDKIRK OIL FIELD

PROJECT NO.	161638	DWG FILE	161638-1
DRAWN BY.	CL	DATE	8/13/08

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 1

LEGEND

- Monitoring Well Locations
- Soil Boring
- Gauging Station
- Seasonal Water Sample and Stream Flow Measurement Locations [River Sample (RS) and Stream Flow (SF)]
- Produced Water Sample Location
- Well (Source TDLR)
- Well (Source TWDB)
- Well (Source Field Located)
- Surface Drainage (River and Creeks)
- Pit Locations
- Springs
- BEG River Segments for Machae Creek Area (Kilometer Markers)
- Site Features
- Permitted Location
- Dry Hole
- Oil
- Gas
- Oil / Gas
- Plugged Oil
- Plugged Gas
- Canceled / Abandoned Location
- Plugged Oil / Gas
- Injection / Disposal
- Core Hole

SOURCE:

1. BEG Airborne Geophysical Survey Report (ground conductivity, hydrochemical analysis, and surface water measurements)
2. Texas Water Develoment Board (water and gas well locations)
3. Texas Department of Licensing Regulation (water wells)
4. U.S.G.S.Digital Ortho Quater Quads (DOQQs) for Bronte SE (1996), Bronte SW (1996), Cement Mountain NE (1996), Cement Mountain NW (1996), Robert Lee SE (1996), Robert Lee SW (1996), Shawville NE (1996), and Shawville NW (1996), Texas DOQQs.
5. San Angelo contact from TWDB Report 166, Ground-Water Resources of Coke County, Texas.
6. National Hydrography Dataset (surface drainage).
7. Approximate location of pits determined from historical aerial photographs (1939, 1957, 1964, and 1971)

NOTE:

1. SWDF = Salt Water Disposal Facility (Salmon #1 SWD 06788)

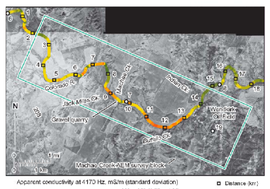


Figure 35. Map of the Mashae Creek area depicting apparent conductivity measured at 41.70 Hz during the airborne geophysical survey (colored dots). The numbered points are the distance (in km) along the stream segment. The 41.70-Hz frequency explores from the land surface to an average depth of about 33 m, estimated from average conductivity measured at this frequency along the Colorado River below Spence Reservoir (table 5).

N

1,000 0 1,000 2,000

Feet

SITE MAP

RAILROAD COMMISSION OF TEXAS
WENDKIRK OIL FIELD

PROJECT NO.: 154651 | DATE: 8/14/2008

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE 2

LEGEND

- Monitoring Well Locations
- Soil Boring
- Gauging Station
- Seasonal Water Sample and Stream Flow Measurement Locations [River Sample (RS) and Stream Flow (SF)]
- Well (Source TDLR)
- Well (Source TWDB)
- Well (Source Field Located)
- Surface Drainage (River and Creeks)
- Pit Locations
- Springs
- BEG River Segments for Machae Creek Area (Kilometer Markers)
- Site Features
- Permitted Location
- Dry Hole
- Oil
- Gas
- Oil / Gas
- Plugged Oil
- Plugged Gas
- Canceled / Abandoned Location
- Plugged Oil / Gas
- Injection / Disposal
- Core Hole
- 1754.36 Groundwater Elevation
- Groundwater Elevation Contour Line (Dashed where Inferred)

SOURCE:

1. BEG Airborne Geophysical Survey Report (ground conductivity, hydrochemical analysis, and surface water measurements)
2. Texas Water Develoment Board (water and gas well locations)
3. Texas Department of Licensing Regulation (water wells)
4. U.S.G.S.Digital Ortho Quater Quads (DOQQs) for Bronte SE (1996), Bronte SW (1996), Cement Mountain NE (1996), Cement Mountain NW (1996), Rober Lee SE (1996), Robert Lee SW (1996), Shawville NE (1996), and Shawville NW (1996), Texas DOQQs.
5. San Angelo contact from TWDB Report 166, Ground-Water Resources of Coke County, Texas.
6. National Hydrography Dataset (surface drainage).
7. Approximate location of pits determined from historical aerial photographs (1939, 1957, 1964, and 1971)

NOTE:

1. SWDF = Salt Water Disposal Facility (Salmon #1 SWD 06788)
2. Groundwater elevation data from monitoring well MW-12 was not used for groundwater contouring because the well did not equilibrate after installation and sampling.
3. Groundwater elevation data from wells CW-1, MW-14, MW-19, and MW-20 were not used to construct map.

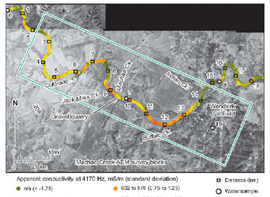


Figure 35. Map of the Machae Creek area depicting apparent conductivity measured at 4170 Hz during the airborne geophysical survey (colored dots). The numbered points are the distance (in km) along the stream segment. The 4170-Hz frequency explores from the base surface to an average depth of about 30 m, estimated from average conductivity measured at this frequency along the Colorado River below Spence Reservoir (table 5).

N

1,000 0 1,000 2,000

Feet

GROUNDWATER POTENTIOMETRIC SURFACE MAP - APRIL 20, 2007

RAILROAD COMMISSION OF TEXAS
WENDKIRK OIL FIELD

PROJECT NO.: 154651 | DATE: 8/14/2008

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SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE 3

LEGEND

- Monitoring Well Locations
- Soil Boring
- Gauging Station
- Seasonal Water Sample and Stream Flow Measurement Locations (River Sample (RS) and Stream Flow [SF])
- Well (Source TDLR)
- Well (Source TWDB)
- Well (Source Field Located)
- Surface Drainage (River and Creeks)
- Pit Locations
- Springs
- BEG River Segments for Machae Creek Area (Kilometer Markers)
- Site Features
- Permitted Location
- Dry Hole
- Oil
- Gas
- Oil / Gas
- Plugged Oil
- Plugged Gas
- Canceled / Abandoned Location
- Plugged Oil / Gas
- Injection / Disposal
- Core Hole
- 1754.79 Groundwater Elevation
- Groundwater Elevation Contour Line

SOURCE:

1. BEG Airborne Geophysical Survey Report (ground conductivity, hydrochemical analysis, and surface water measurements)
2. Texas Water Develoment Board (water and gas well locations)
3. Texas Department of Licensing Regulation (water wells)
4. U.S.G.S.Digital Ortho Quater Quads (DOQQs) for Bronte SE (1996), Bronte SW (1996), Cement Mountain NE (1996), Cement Mountain NW (1996), Rober Lee SE (1996), Robert Lee SW (1996), Shawville NE (1996), and Shawville NW (1996), Texas DOQQs.
5. San Angelo contact from TWDB Report 166, Ground-Water Resources of Coke County, Texas.
6. National Hydrography Dataset (surface drainage).
7. Approximate location of pits determined from historical aerial photographs (1939, 1957, 1964, and 1971)

NOTE:

1. SWDF = Salt Water Disposal Facility (Salmon #1 SWD 06788)

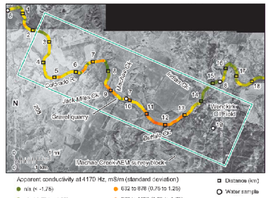


Figure 35. Map of the Machae Creek area depicting apparent conductivity measured at 4170 Hz during the airborne geophysical survey (colored dots). The numbered points are the distance (in km) along the stream segment. The 4170-Hz frequency explores from the land surface to an average depth of about 33 m, estimated from average conductivity measured at this frequency along the Colorado River below Spence Reservoir (table 5).

N

1,000 0 1,000 2,000

Feet

GROUNDWATER POTENTIOMETRIC SURFACE MAP - AUGUST 2008

RAILROAD COMMISSION OF TEXAS
WENDKIRK OIL FIELD

PROJECT NO.: 161638 | DATE: 8/14/2008

TRC
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SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE 4

4313302	
Date	mg/L
07/12/06	100
08/28/06	98.3
04/12/07	98.3
08/06/08	85

MW-14	
Date	mg/L
04/17/07	5770
08/06/08	5870

MW-8	
Date	mg/L
08/25/06	8010
04/11/07	7550
08/05/08	4120 / 5530

MW-13	
Date	mg/L
04/16/07	5880
08/05/08	5590

MW-9	
Date	mg/L
08/25/06	634
04/11/07	616
08/05/08	217

OW-1	
Date	mg/L
07/07/08	29400
08/06/08	28900 / 28400

Mays-01	
Date	mg/L
08/23/06	27200
04/09/07	27900 / 28700
06/21/07	36000 / 35800

MW-12	
Date	mg/L
04/16/07	16400
07/08/08	18500
08/05/08	17500

MW-18	
Date	mg/L
04/18/07	29000
08/06/08	25600

Mays-02 (W-WW-081)	
Date	mg/L
08/06/08	19200

MW-10	
Date	mg/L
04/17/07	14600
07/07/08	14300 / 14400
08/05/08	13600

Milford-01	
Date	mg/L
07/14/06	659 / 467
08/24/06	878 / 640
04/11/07	1480

MW-11	
Date	mg/L
04/13/07	7820
07/07/08	4160
08/05/08	5250

MW-7	
Date	mg/L
08/25/06	179
04/11/07	189
08/05/08	184

Milford-02	
Date	mg/L
07/14/06	786
08/24/06	756
04/11/07	798
08/05/08	800

MW-2	
Date	mg/L
08/30/06	168 / 164
04/10/07	148
08/05/08	156

MW-3	
Date	mg/L
08/28/06	4090
04/10/07	3910
08/05/08	2450

MW-1	
Date	mg/L
08/30/06	8250
04/13/07	8720
08/05/08	8180

MW-15	
Date	mg/L
04/16/07	3080
08/05/08	2620

MW-16	
Date	mg/L
04/17/07	4990
08/05/08	1440

MW-4	
Date	mg/L
08/24/06	7950
04/10/07	6040 / 5940
08/05/08	5820

MW-5	
Date	mg/L
08/24/06	14900
04/10/07	15100
07/07/08	14600
08/05/08	13900

MW-19	
Date	mg/L
07/18/07	14100 / 13900
08/06/08	12600

MW-20	
Date	mg/L
07/18/07	1720
08/06/08	945

MW-6	
Date	mg/L
08/28/06	6020
04/13/07	6060
08/06/08	5750

MW-17	
Date	mg/L
04/18/07	3870
07/08/08	3800
08/06/08	3540

Rawlins	
Date	mg/L
07/13/06	175

4313603	
Date	mg/L
07/13/06	1500 / 1500
08/23/06	1410

4313608	
Date	mg/L
07/13/06	210
08/23/06	197

4313605	
Date	mg/L
08/23/06	519
04/09/07	563

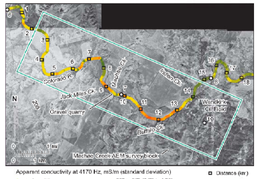


Figure 35. Map of the Maclhae Creek area depicting apparent conductivity measured at 4170 Hz during the airborne geophysical survey (colored dots). The numbered points are the distance (in km) along the stream segment. The 4170-Hz frequency explores from the land surface to an average depth of about 53 m, estimated from average conductivity measured at this frequency along the Colorado River below Spence Reservoir (table 5).

LEGEND

- Monitoring Well Locations
- Soil Boring
- Gauging Station
- Seasonal Water Sample and Stream Flow Measurement Locations [River Sample (RS) and Stream Flow (SF)]
- Well (Source TDLR)
- Well (Source TWDB)
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- Plugged Oil / Gas
- Injection / Disposal
- Core Hole

SOURCE:

1. BEG Airborne Geophysical Survey Report (ground conductivity, hydrochemical analysis, and surface water measurements)
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5. San Angelo contact from TWDB Report 166, Ground-Water Resources of Coke County, Texas.
6. National Hydrography Dataset (surface drainage).
7. Approximate location of pits determined from historical aerial photographs (1939, 1957, 1964, and 1971)

NOTE:

1. SWDF = Salt Water Disposal Facility (Salmon #1 SWD 06788)

N

1,000 0 1,000 2,000
Feet

CHRONOLOGICAL CHLORIDE CONCENTRATION MAP

RAILROAD COMMISSION OF TEXAS
WENDKIRK OIL FIELD

PROJECT NO.: 161638 | DATE: 8/15/2008

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AUSTIN, TEXAS 78752
512-329-6080

FIGURE 5

TABLES

Table 1. Summary of Seasonal Sample Locations

Seasonal Sample Areas	Sample Locations	Sample ID	Sample Date(s)	Laboratory Analysis
Colorado River	Segments 3, 7, 9 through 15, 17	W-RS-03, W-RS-07, W-RS-09, W-RS-10, W-RS-11, W-RS-12, W-RS-13, W-RS-14, W-RS-15, W-RS-16, W-RS-17	July 2006, August 2006, April 2007	Calcium, Chloride, Sodium, Sulfate, TDS, BTEX, TPH
	Segment 8	W-RS-08	July 2006	
Surface Water (Located in Wendkirk Oil Field)	May's Ranch Creek (upstream)	W-C-01	July 2006, August 2006, April 2007	Calcium, Chloride, Sodium, Sulfate, TDS
	May's Ranch Creek (downstream)	W-C-02	April 2007	
Surface Water (Not associated with Wendkirk Oil Field)	SANCO Quarry	W-Q-01	July 2006, August 2006, April 2007	
	North of River Segments 7 and 8	W-O-01	July 2006	Not Applicable – Field Chloride Test Kit
Spring Water	Spring 4314102 (east)	W-SG-4314102-01	July 2006, August 2006, April 2007	Calcium, Chloride, Sodium, Sulfate, TDS, BTEX, TPH
	Spring 4314102 (west)	W-SG-4314102-02	April 2007	Calcium, Chloride, Sodium, Sulfate, TDS
	Spring 4314104	W-SG-4314104	July 2006, August 2006, April 2007	Calcium, Chloride, Sodium, Sulfate, TDS, BTEX, TPH
	May's Ranch Seep	W-SP-01	July 2006, August 2006, April 2007	Calcium, Chloride, Sodium, Sulfate, TDS, BTEX, TPH
Groundwater	Mays-01	W-WW-Mays-01	August 2006, April 2007	Calcium, Chloride, Sodium, Sulfate, TDS, BTEX, TPH
	Milford-01	W-WW-Milford-01	July 2006, August 2006, April 2007	
	Milford-02	W-WW-Milford-02		
	Rawlings	W-WW-Rawlins	July 2006	
	Water well 4313302	W-WW-4313302	July 2006, August 2006, April 2007	
	Water well 4313605	W-WW-4313605	August 2006, April 2007	
	Water well 4313603	W-WW-4313603	July 2006, August 2006	
	Water well 4313608	W-WW-4313608		

Table 2. Fluid Level Gauging Data

Location ID	Ground Elevation (feet)	Top-of-Casing Elevation (feet)	Date Water Level Measured	Total Depth of Well (feet btoc)	Depth to Water (feet btoc)	Water Elevation (ft AMSL)
MW-01	1779.45	1782.62	8/30/2006	43.25	24.16	1758.46
MW-01	1779.45	1782.62	10/26/2006	NM	23.97	1758.65
MW-01	1779.45	1782.62	4/20/2007	NM	25.92	1756.70
MW-01	1779.45	1782.62	8/4/2008	43.10	25.16	1757.46
MW-02	1771.43	1775.03	8/30/2006	39.05	27.02	1748.01
MW-02	1771.43	1775.03	10/26/2006	NM	27.37	1747.66
MW-02	1771.43	1775.03	4/20/2007	NM	27.98	1747.05
MW-02	1771.43	1775.03	8/4/2008	38.44	27.68	1747.35
MW-03	1773.61	1776.09	8/30/2006	40.20	21.69	1754.40
MW-03	1773.61	1776.09	10/26/2006	NM	21.45	1754.64
MW-03	1773.61	1776.09	4/20/2007	NM	21.73	1754.36
MW-03	1773.61	1776.09	6/20/2007	NM	18.35	1757.74
MW-03	1773.61	1776.09	8/4/2008	39.59	21.30	1754.79
MW-04	1772.28	1774.54	8/30/2006	36.51	16.75	1757.79
MW-04	1772.28	1774.54	10/26/2006	NM	16.91	1757.63
MW-04	1772.28	1774.54	4/20/2007	NM	17.47	1757.07
MW-04	1772.28	1774.54	8/4/2008	37.71	16.76	1757.78
MW-05	1760.71	1763.19	8/30/2006	35.15	17.23	1745.96
MW-05	1760.71	1763.19	10/26/2006	NM	16.43	1746.76
MW-05	1760.71	1763.19	4/20/2007	NM	16.65	1746.54
MW-05	1760.71	1763.19	6/20/2007	NM	15.80	1747.39
MW-05	1760.71	1763.19	7/17/2007	NM	15.80	1747.39
MW-05	1760.71	1763.19	7/7/2008	35.02	16.21	1746.98
MW-05	1760.71	1763.19	8/4/2008	NM	16.32	1746.87
MW-06	1831.77	1834.47	8/30/2006	99.40	52.34	1782.13
MW-06	1831.77	1834.47	10/26/2006	NM	51.53	1782.94
MW-06	1831.77	1834.47	4/20/2007	NM	58.92	1775.55
MW-06	1831.77	1834.47	8/4/2008	96.07	52.97	1781.50
MW-07	1767.97	1771.10	8/30/2006	40.00	31.84	1739.26
MW-07	1767.97	1771.10	10/26/2006	NM	31.07	1740.03
MW-07	1767.97	1771.10	4/20/2007	NM	32.32	1738.78
MW-07	1767.97	1771.10	8/4/2008	39.72	29.45	1741.65
MW-08	1777.30	1780.69	8/30/2006	62.12	33.13	1747.56
MW-08	1777.30	1780.69	10/26/2006	NM	32.86	1747.83
MW-08	1777.30	1780.69	4/20/2007	NM	33.32	1747.37
MW-08	1777.30	1780.69	8/4/2008	62.71	32.73	1747.96
MW-09	1757.12	1759.82	8/30/2006	32.19	16.49	1743.33
MW-09	1757.12	1759.82	10/26/2006	NM	16.20	1743.62
MW-09	1757.12	1759.82	4/20/2007	NM	15.67	1744.15
MW-09	1757.12	1759.82	6/21/2007	NM	14.95	1744.87
MW-09	1757.12	1759.82	8/4/2008	30.82	16.45	1743.37
MW-10	1764.68	1767.02	4/20/2007	72.30	14.90	1752.12
MW-10	1764.68	1767.02	6/20/2007	72.30	14.20	1752.82
MW-10	1764.68	1767.02	7/7/2008	72.40	14.19	1752.83
MW-10	1764.68	1767.02	8/4/2008	72.66	14.34	1752.68

Table 2. Fluid Level Gauging Data

Location ID	Ground Elevation (feet)	Top-of-Casing Elevation (feet)	Date Water Level Measured	Total Depth of Well (feet btoc)	Depth to Water (feet btoc)	Water Elevation (ft AMSL)
MW-11	1764.60	1766.78	4/20/2007	32.36	21.64	1745.14
MW-11	1764.60	1766.78	6/19/2007	NM	20.90	1745.88
MW-11	1764.60	1766.78	7/17/2007	NM	21.10	1745.68
MW-11	1764.60	1766.78	7/7/2008	32.33	21.59	1745.19
MW-11	1764.60	1766.78	8/4/2008	32.14	21.86	1744.92
MW-12	1763.54	1766.10	4/20/2007	42.39	31.18	1734.92
MW-12	1763.54	1766.10	7/7/2008	42.47	18.70	1747.40
MW-12	1763.54	1766.10	8/4/2008	NM	18.66	1747.44
MW-13	1759.45	1762.49	4/20/2007	27.95	17.54	1744.95
MW-13	1759.45	1762.49	7/18/2007	NM	17.35	1745.14
MW-13	1759.45	1762.49	8/4/2008	27.85	18.16	1744.33
MW-14	1787.19	1789.86	4/20/2007	83.30	69.59	1720.27
MW-14	1787.19	1789.86	6/21/2007	NM	27.21	1762.65
MW-14	1787.19	1789.86	8/4/2008	83.02	24.68	1765.18
MW-15	1790.04	1792.87	4/20/2007	43.50	25.85	1767.02
MW-15	1790.04	1792.87	8/4/2008	42.72	25.09	1767.78
MW-16	1785.23	1788.19	4/20/2007	38.07	32.33	1755.86
MW-16	1785.23	1788.19	8/4/2008	37.75	15.85	1772.34
MW-17	1824.99	1827.63	4/20/2007	73.00	65.83	1761.80
MW-17	1824.99	1827.63	7/8/2008	72.95	65.81	1761.82
MW-17	1824.99	1827.63	8/4/2008	NM	66.12	1761.51
MW-18	1773.10	1775.18	4/20/2007	72.29	19.88	1755.30
MW-18	1773.10	1775.18	6/19/2007	NM	22.33	1752.85
MW-18	1773.10	1775.18	8/4/2008	NM	20.25	1754.93
MW-19	1827.10	1830.14	7/18/2007	105.50	75.70	1754.44
MW-19	1827.10	1830.14	8/4/2008	NM	75.50	1754.64
MW-20	1888.48	1890.90	7/18/2007	115.50	98.55	1792.35
MW-20	1888.48	1890.90	8/4/2008	NM	91.08	1799.82
Mays-01	1817.14	1820.66	8/30/2006	190.00	68.30	1752.36
Mays-01	1817.14	1820.66	10/26/2006	NM	68.04	1752.62
Mays-01	1817.14	1820.66	4/20/2007	NM	68.26	1752.40
Mays-01	1817.14	1820.66	6/20/2007	NM	67.27	1753.39
Mays-02	NM	NM	8/6/2008	NM	92.24	NA
OW-01	1816.44	1818.56	7/17/2007	97.81	66.54	1752.02
OW-01	1816.44	1818.56	7/7/2008	96.95	47.56 (1)	1771.00
OW-01	1816.44	1818.56	8/4/2008	NM	67.01	1751.55
Milford-01	1829.94	1832.20	7/14/2006	180.50	83.15	1749.05
Milford-01	1829.94	1832.20	8/30/2006	NM	83.05	1749.15
Milford-01	1829.94	1832.20	4/20/2007	NM	82.94	1749.26
Milford-01	1829.94	1832.20	8/4/2008	NM	NM	NA
Milford-02	1814.59	1816.53	7/14/2006	118.80	63.01	1753.52
Milford-02	1814.59	1816.53	8/30/2006	NM	63.30	1753.23
Milford-02	1814.59	1816.53	4/20/2007	NM	63.10	1753.43
Milford-02	1814.59	1816.53	8/5/2008	NM	63.28	1753.25

Table 2. Fluid Level Gauging Data

Location ID	Ground Elevation (feet)	Top-of-Casing Elevation (feet)	Date Water Level Measured	Total Depth of Well (feet btoc)	Depth to Water (feet btoc)	Water Elevation (ft AMSL)
RG-01	NA	1747.70	4/20/2007	NA	2.72	1744.98
RG-01	NA	1747.70	8/5/2008	NM	NM - DAMAGED	NA
RG-02	NA	1748.34	4/20/2007	NA	3.70	1744.64
RG-02	NA	1748.34	8/5/2008	NA	3.49	1744.85
RG-03	NA	1746.26	4/20/2007	NA	3.67	1742.59
RG-03	NA	1746.26	8/5/2008	NA	3.73	1742.53

Notes:
(1) OW-1 is located adjacent to Mays-01. Mays-01 was plugged and abandoned during measurement on 7/7/2008 which appears to have influenced the water level elevation in OW-1.
btoc = below top of casing
AMSL = above mean sea level
NA = not applicable
NM = not measured

Table 3. Surface Water, Groundwater, and Produced Water Analytical Results

Sample ID	Sample Location	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Sodium (mg/L)	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	Alkalinity, Carbonate (as CaCO3) (mg/L)	Alkalinity, Hydroxide (as CaCO3) (mg/L)	Alkalinity, Total (as CaCO3) (mg/L)	pH (pH units)	Specific Conductance (umhos/cm)	Total Dissolved Solids (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes, total (mg/L)	TX1005 >C12-C28 (mg/L)	TX1005 >C28-C35 (mg/L)	TX1005 C6-C12 (mg/L)	TX1005 C6-C35 (mg/L)
W-MW-01	Monitoring Well #1	8/30/2006	751	NA	NA	NA	8250	3750	5700	NA	NA	NA	NA	NA	NA	19000	0.0008 U	0.002 U	0.002 U	0.003 U	0.657 U	0.657 U	0.657 U	0.657 U
W-MW-01	Monitoring Well #1	4/13/2007	831	NA	NA	NA	8720	5640	6140	NA	NA	NA	NA	NA	NA	21900	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-01	Monitoring Well #1	8/5/2008	664	679	63.0	16.2	8180	5410	4800	384	10.0 U	10.0 U	384	6.94	33800	22000	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-02	Monitoring Well #2	8/30/2006	800	NA	NA	NA	168	1850	171	NA	NA	NA	NA	NA	NA	3240	0.0008 U	0.002 U	0.002 U	0.003 U	0.686 U	0.686 U	0.686 U	0.686 U
W-MW-02	Monitoring Well #2	4/10/2007	942	NA	NA	NA	148	1950	145	NA	NA	NA	NA	NA	NA	3290	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-02-D	Monitoring Well #2 Duplicate	8/30/2006	775	NA	NA	NA	164	1840	177	NA	NA	NA	NA	NA	NA	3250	0.0008 U	0.002 U	0.002 U	0.003 U	0.673 U	0.673 U	0.673 U	0.673 U
W-MW-02	Monitoring Well #2	8/5/2008	738	166	9.72	0.595 J	156	1980	106	185	10.0 U	10.0 U	185	7.06	3390	3310	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-03	Monitoring Well #3	8/28/2006	907	NA	NA	NA	4090	3070	1880	NA	NA	NA	NA	NA	NA	11600	0.0008 U	0.002 U	0.002 U	0.003 U	0.656 U	0.656 U	0.656 U	0.656 U
W-MW-03	Monitoring Well #3	4/10/2007	1000	NA	NA	NA	3910	3290	2030	NA	NA	NA	NA	NA	NA	11900	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-03	Monitoring Well #3	8/5/2008	585	576	17.9	4.48	2450	3360	1180	320	10.0 U	10.0 U	320	6.86	11400	9800	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-04	Monitoring Well #4	8/24/2006	1120	NA	NA	NA	7950	1640	3920	NA	NA	NA	NA	NA	NA	15200	0.0008 U	0.002 U	0.002 U	0.003 U	0.685 U	0.685 U	0.685 U	0.685 U
W-MW-04	Monitoring Well #4	4/10/2007	953	NA	NA	NA	6040	2080	3810	NA	NA	NA	NA	NA	NA	12700	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-04-D	Monitoring Well #4 Duplicate	4/10/2007	1020	NA	NA	NA	5940	2030	3760	NA	NA	NA	NA	NA	NA	11800	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-04	Monitoring Well #4	8/5/2008	724	317	67.0	10.3	5820	1750	3090	317	10.0 U	10.0 U	317	6.88	20300	12800	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-05	Monitoring Well #5	8/24/2006	1120	NA	NA	NA	14900	2730	7070	NA	NA	NA	NA	NA	NA	27400	0.0008 U	0.002 U	0.002 U	0.003 U	0.669 U	0.669 U	0.669 U	0.669 U
W-MW-05	Monitoring Well #5	4/10/2007	1030	NA	NA	NA	15100	2820	8690	NA	NA	NA	NA	NA	NA	27100	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-05	Monitoring Well #5	7/7/2008	899	NA	NA	NA	14600	2960	7040	NA	NA	NA	NA	NA	NA	28700	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-05	Monitoring Well #5	8/5/2008	885	325	109	25.1	13900	2740	7150	305	10.0 U	10.0 U	305	6.69	46700	27900	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-06	Monitoring Well #6	8/28/2006	469	NA	NA	NA	6020	1100	2860	NA	NA	NA	NA	NA	NA	11300	0.0008 U	0.002 U	0.002 U	0.003 U	0.674 U	0.674 U	0.674 U	0.674 U
W-MW-06	Monitoring Well #6	4/13/2007	523	NA	NA	NA	6060	1170	3620	NA	NA	NA	NA	NA	NA	12400	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-06	Monitoring Well #6	8/6/2008	376	286	55.0	9.89	5750	1040	2800	329	10.0 U	10.0 U	329	6.87	20200	11800	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-07	Monitoring Well #7	8/25/2006	816	NA	NA	NA	179	495	286	NA	NA	NA	NA	NA	NA	1300	0.0008 U	0.002 U	0.002 U	0.003 U	0.68 U	0.68 U	0.68 U	0.68 U
W-MW-07	Monitoring Well #7	4/11/2007	185	NA	NA	NA	189	532	260	NA	NA	NA	NA	NA	NA	1320	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-07	Monitoring Well #7	8/5/2008	142	32.1	12.5	0.569 J	184	493	264	269	10.0 U	10.0 U	269	7.41	1930	1370	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-08	Monitoring Well #8	8/25/2006	588	NA	NA	NA	8010	7520	6950	NA	NA	NA	NA	NA	NA	23200	0.0008 U	0.002 U	0.002 U	0.003 U	0.661 U	0.661 U	0.661 U	0.661 U
W-MW-08	Monitoring Well #8	4/11/2007	599	NA	NA	NA	7550	7660	6520	NA	NA		NA	NA	NA	23000	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-08	Monitoring Well #8	8/5/2008	433	162	73.4	10.9	4120	5480	4560	384	10.0 U	10.0 U	384	7.06	22300	16100	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-08-D	Monitoring Well #8 - Duplicate	8/5/2008	426	188	84.6	10.9	5530	6700	4720	423	10.0 U	10.0 U	423	7.09	27300	19000	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-09	Monitoring Well #9	8/25/2006	490	NA	NA	NA	634	862	672	NA	NA	NA	NA	NA	NA	2600	0.0008 U	0.002 U	0.002 U	0.003 U	0.677 U	0.677 U	0.677 U	0.677 U
W-MW-09	Monitoring Well #9	4/11/2007	244	NA	NA	NA	616	1020	704	NA	NA	NA	NA	NA	NA	2820	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-09	Monitoring Well #9	8/5/2008	84.6	35.6	8.31	0.850 J	217	333	347	440	10.0 U	10.0 U	440	7.44	2220	1530	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-10	Monitoring Well #10	4/17/2007	881	NA	NA	NA	14600	6700	11600	NA	NA	NA	NA	NA	NA	30800	0.0008 U	0.002 U	0.002 U	0.003 U	0.651 U	0.651 U	0.651 U	0.651 U
W-MW-10	Monitoring Well #10	7/7/2008	763	NA	NA	NA	14300	6500	8380	NA	NA	NA	NA	NA	NA	32300	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-10-D	Monitoring Well #10 Duplicate	7/7/2008	760	NA	NA	NA	14400	6510	8520	NA	NA	NA	NA	NA	NA	32300	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-10	Monitoring Well #10	8/5/2008	751	339	138	26.2	13600	6150	8850	408	10.0 U	10.0 U	408	6.73	51200	32200	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-11	Monitoring Well #11	4/13/2007	983	NA	NA	NA	7820	1140	4210	NA	NA	NA	NA	NA	NA	14900	0.0008 U	0.002 U	0.002 U	0.003 U	0.682 U	0.682 U	0.682 U	0.682 U
W-MW-11	Monitoring Well #11	7/7/2008	499	NA	NA	NA	4160	812	1840	NA	NA	NA	NA	NA	NA	13300	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-11	Monitoring Well #11	8/5/2008	764	273	53.0	14.4	5250	1070	4420	262	10.0 U	10.0 U	262	6.87	21800	13200	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-12	Monitoring Well #12	4/16/2007	1320	NA	NA	NA	16400	5080	10900	NA	NA	NA	NA	NA	NA	31800	0.0008 U	0.002 U	0.002 U	0.003 U	0.682 U	0.682 U	0.682 U	0.682 U
W-MW-12	Monitoring Well #12	7/8/2008	984	NA	NA	NA	18500	5210	9410	NA	NA	NA	NA	NA	NA	37700	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-12	Monitoring Well #12	8/5/2008	1020	634	128	31.7	17500	4610	9190	354	10.0 U	10.0 U	354	6.71	58400	37400	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-13	Monitoring Well #13	4/16/2007	1600	NA	NA	NA	5880	1980	3670	NA	NA	NA	NA	NA	NA	13200	0.0008 U	0.002 U	0.002 U	0.003 U	0.676 U	0.676 U	0.676 U	0.676 U
W-MW-13	Monitoring Well #13	8/5/2008	748	262	24.2	21.0	5590	2160	2520	272	10.0 U	10.0 U	272	6.99	21000	13200	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-14	Monitoring Well #14	4/17/2007	574	NA	NA	NA	5770	6540	5980	NA	NA	NA	NA	NA	NA	18200	0.0008 U	0.002 U	0.002 U	0.003 U	0.666 U	0.666 U	0.666 U	0.666 U
W-MW-14	Monitoring Well #14	8/6/2008	532	277	82.0	30.0 U	5870	6760	5100	424	10.0 U	10.0 U	424	6.77	30800	20800	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-15	Monitoring Well #15	4/16/2007	474	NA	NA	NA	3080	2600	2060	NA	NA	NA	NA	NA	NA	8980	0.0008 U	0.002 U	0.002 U	0.003 U	0.687 U	0.687 U	0.687 U	0.687 U
W-MW-15	Monitoring Well #15	8/5/2008	574	465	37.2	6.69	2620	4670	1850	373	10.0 U	10.0 U	373	7.03	12600	10500	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-16	Monitoring Well #16	4/17/2007	888	NA	NA	NA	4990	3190	2560	NA	NA	NA	NA	NA	NA	13200	0.0008 U	0.002 U	0.002 U	0.003 U	0.668 U	0.668 U	0.668 U	0.668 U
W-MW-16	Monitoring Well #16	8/5/2008	233	138	25.6	3.46	1440	888	571	237	10.0 U	10.0 U	237	7.32	4520	3070	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-17	Monitoring Well #17	4/18/2007	418	NA	NA	NA	3870	2650	2680	NA	NA	NA	NA	NA	NA	10100	0.0008 U	0.002 U	0.002 U	0.003 U	0.682 U	0.682 U	0.682 U	0.682 U
W-MW-17	Monitoring Well #17	7/8/2008	404	NA	NA	NA	3800	2310	2400	NA	NA	NA	NA	NA	NA	10500	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-17	Monitoring Well #17	8/6/2008	414	187	46.7	7.45	3540	2230	2320	325	10.0 U	10.0 U	325	6.87	16300	10200	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-18	Monitoring Well #18	4/18/2007	1450	NA	NA	NA	29000	4620	14900	NA	NA	NA	NA	NA	NA	47900	0.0008 U	0.002 U	0.002 U	0.003 U	0.653 U	0.653 U	0.653 U	0.653 U
W-MW-18-D	Monitoring Well #18 Duplicate	4/18/2007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0008 U	0.002 U	0.002 U	0.003 U	0.664 U	0.664 U	0.664 U	0.664 U
W-MW-18	Monitoring Well #18	8/6/2008	1390	603	175	44.2	25600	4180	13700	286	10.0 U	10.0 U	286	6.48	89200	49300	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-19	Monitoring Well #19	7/18/2007	958	NA	NA	NA	14100	3910	7410	NA	NA	NA	NA	NA	NA	28600	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-19-D	Monitoring Well #19 Duplicate	7/18/2007	951	NA	NA	NA	13900	3700	7360	NA	NA	NA	NA	NA	NA	28500	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-19	Monitoring Well #19	8/6/2008	971	360	98.7	18.7	12600	3950	6930	301	10.0 U	10.0 U	301	6.74	35800	22100	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-20	Monitoring Well #20	7/18/2007	270	NA	NA	NA	1720	1500	1300	NA	NA	NA	NA	NA	NA	5080	NA	NA	NA	NA	NA	NA	NA	NA
W-MW-20	Monitoring Well #20	8/6/2008	342	165	21.2	2.99	945	1160	675	322	10.0 U	10.0 U	322	6.95	5470	4120	NA	NA	NA	NA	NA	NA	NA	NA
W-OB-01	Observation Well #1	7/7/2008	3660	NA	NA	NA	29400	1960	9580	NA	NA	NA	NA	NA	NA	63800	NA	NA	NA	NA	NA	NA	NA	NA
W-OW-01	Observation Well #1	8/6/2008	4090	1080	61.7	163	28900	1420	9430	288	10.0 U	10.0 U	288	6.14	89500	53900	NA	NA	NA	NA	NA	NA	NA	NA
W-OW-01-D	Observation Well #1 - Duplicate	8/6/2008	4090	1100	61.6	164	28400	1490	9540	286	10.0 U	10.0 U	286	6.13	85500	54400	NA	NA	NA	NA	NA	NA	NA	NA
W-WW-4313302	Water Well 4313302	7/12/2006	256	NA	NA	NA	100	1090	150	NA	NA	NA	NA	NA	NA	1950	0.0008 U	0.002 U	0.002 U	0.003 U	0.711 U	0.711 U	0.711 U	0.711 U
W-WW-4313302	Water Well 4313302	8/28/2006	288	NA	NA	NA	98.3	1050	149	NA	NA	NA	NA	NA	NA	2040	0.0008 U	0.002 U	0.002 U	0.003 U	0.67 U	0.67 U	0.67 U	0.67 U
W-WW-4313302	Water Well 4313302	4/12/2007	261	NA	NA	NA	98.3	1090	139	NA	NA	NA	NA	NA	NA	1990	NA	NA	NA	NA	NA	NA	NA	NA
W-WW-4313302	Water Well 4313302	8/6/2008	101	97.5	7.95	0.703 J	85	900	111	51.6	10.0 U	10.0 U	51.6	6.98	1590	1210	NA	NA	NA	NA	NA	NA	NA	NA
W-WW-4313603	Water Well 4313603	7/13/2006	147	NA	NA	NA	1500	540	955	NA	NA	NA	NA	NA	NA	3370	0.0008 U	0.002 U	0.002 U	0.003 U	0.679 U	0.679 U	0.679 U	0.679 U
W-WW-4313603-D	Water Well 4313603 Duplicate	7/13/2006	144	NA	NA	NA	1500	545	937	NA	NA	NA	NA	NA	NA	3340	0.0008 U	0.002 U	0.002 U	0.003 U	0.691 U	0.691 U	0.691 U	0.691 U
W-WW-4313603	Water Well 4313603	8/23/2006	158	NA	NA	NA	1410	510	932	NA	NA	NA	NA	NA	NA	3320	0.0008 U	0.002 U	0.002 U	0.003 U	0.678 U	0.678 U	0.678 U	0.678 U
W-WW-4313603	Water Well 4313603	4/11/2007	PUMP NOT OPERATING																					
W-WW-4313605	Water Well 4313605	8/23/2006	106	NA	NA	NA	519	490	437	NA	NA	NA	NA	NA	NA	1740	0.0008 U	0.002 U	0.002 U	0.003 U	0.674 U	0.674 U	0.674 U	0.674 U
W-WW-4313605	Water Well 4313605	4/9/2007	131	NA	NA	NA	563	506	470	NA	NA	NA	NA	NA	NA	1970	NA	NA	NA	NA	NA	NA	NA	NA
W-WW-4313608	Water Well 4313608	7/13/2006	51.8	NA	NA	NA	210	112	205	NA	NA	NA	NA	NA	NA	763	0.0008 U	0.002 U	0.002 U	0.003 U	0.704 U	0.704 U	0.704 U	0.704 U
W-WW-4313608	Water Well 4313608	8/23/2006	56.8	NA	NA	NA	197	104	191	NA	NA	NA	NA	NA	NA	718	0.0008 U	0.002 U	0.002 U	0.003 U	0.679 U	0.679 U	0.679 U	0.679 U
W-WW-4313608	Water Well 4313608	4/11/2007	PUMP NOT OPERATING																					

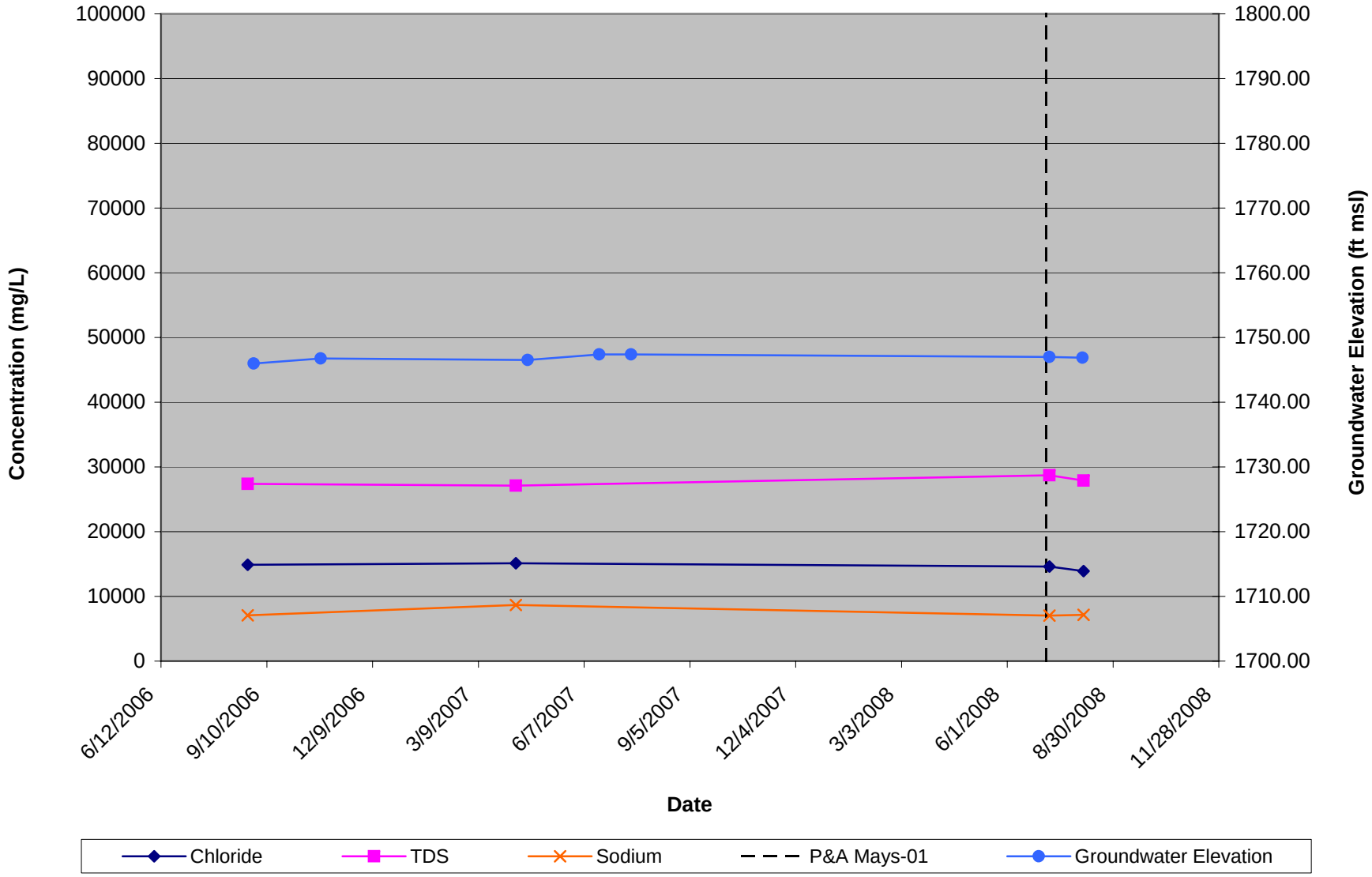
Table 3. Surface Water, Groundwater, and Produced Water Analytical Results

Sample ID	Sample Location	Sample Date	Calcium (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Bromide (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Sodium (mg/L)	Alkalinity, Bicarbonate (as CaCO3) (mg/L)	Alkalinity, Carbonate (as CaCO3) (mg/L)	Alkalinity, Hydroxide (as CaCO3) (mg/L)	Alkalinity, Total (as CaCO3) (mg/L)	pH (pH units)	Specific Conductance (umhos/cm)	Total Dissolved Solids (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes, total (mg/L)	TX1005 >C12-C28 (mg/L)	TX1005 >C28-C35 (mg/L)	TX1005 C6-C12 (mg/L)	TX1005 C6-C35 (mg/L)
W-WW-Mays-01	Water Well May's Ranch #1	8/23/2006	4320	NA	NA	NA	27200	1390	12300	NA	NA	NA	NA	NA	NA	47000	0.0008 U	0.002 U	0.002 U	0.003 U	0.651 U	0.651 U	0.651 U	0.651 U
W-WW-Mays-01	Water Well May's Ranch #1	4/9/2007	3720	NA	NA	NA	27900	1650	10600	NA	NA	NA	NA	NA	NA	50600	NA	NA	NA	NA	NA	NA	NA	NA
W-WW-Mays-01-D	Water Well May's Ranch #1 Duplicate	4/9/2007	3630	NA	NA	NA	28700	1670	10300	NA	NA	NA	NA	NA	NA	51900	NA	NA	NA	NA	NA	NA	NA	NA
Water Well Mays-01 (73.5') *	Water Well May's Ranch #1 @ 73.5 ft btoc	6/21/2007	4580	NA	NA	NA	36000	1350	11900	NA	NA	NA	NA	NA	NA	58200	NA	NA	NA	NA	NA	NA	NA	NA
Water Well Mays-01 (98.5') *	Water Well May's Ranch #1 @ 98.5 ft btoc	6/21/2007	4630	NA	NA	NA	35800	1600	12100	NA	NA	NA	NA	NA	NA	57900	NA	NA	NA	NA	NA	NA	NA	NA
W-WW-081	Water Well May's Ranch #2	8/6/2008	1140	575	125	34.7	19200	3480	9160	237	10.0 U	10.0 U	237	6.60	59400	36700	NA	NA	NA	NA	NA	NA	NA	NA
W-WW-Milford-01	Milford Water Well #1	7/14/2006	77.4	NA	NA	NA	659	2960	754	NA	NA	NA	NA	NA	NA	5210	0.0008 U	0.002 U	0.002 U	0.003 U	0.675 U	0.675 U	0.675 U	0.675 U
W-WW-Milford-01-D	Milford Water Well #1 Duplicate	7/14/2006	69.4	NA	NA	NA	467	2020	691	NA	NA	NA	NA	NA	NA	3730	0.0008 U	0.002 U	0.002 U	0.003 U	0.68 U	0.68 U	0.68 U	0.68 U
W-WW-Milford-01	Milford Water Well #1	8/24/2006	191	NA	NA	NA	878	3930	1680	NA	NA	NA	NA	NA	NA	7260	0.0008 U	0.002 U	0.002 U	0.003 U	0.676 U	0.676 U	0.676 U	0.676 U
W-WW-Milford-01-D	Milford Water Well #1 Duplicate	8/24/2006	157	NA	NA	NA	640	2830	1670	NA	NA	NA	NA	NA	NA	5340	0.0008 U	0.002 U	0.002 U	0.003 U	0.679 U	0.679 U	0.679 U	0.679 U
W-WW-Milford-01	Milford Water Well #1	4/11/2007	258	NA	NA	NA	1480	6810	3450	NA	NA	NA	NA	NA	NA	12400	NA	NA	NA	NA	NA	NA	NA	NA
W-WW-Milford-02	Milford Water Well #2	7/14/2006	195	NA	NA	NA	786	5110	2450	NA	NA	NA	NA	NA	NA	7450	0.0008 U	0.002 U	0.002 U	0.003 U	0.686 U	0.686 U	0.686 U	0.686 U
W-WW-Milford-02	Milford Water Well #2	8/24/2006	235	NA	NA	NA	756	5110	2870	NA	NA	NA	NA	NA	NA	8860	0.0008 U	0.002 U	0.002 U	0.003 U	0.682 U	0.682 U	0.682 U	0.682 U
W-WW-Milford-02	Milford Water Well #2	4/11/2007	242	NA	NA	NA	798	5710	2520	NA	NA	NA	NA	NA	NA	9500	NA	NA	NA	NA	NA	NA	NA	NA
W-WW-Milford-02	Milford Water Well #2	8/5/2008	229	118	44.2	1.38	800	4890	2470	431	10.0 U	10.0 U	431	7.22	11200	9980	NA	NA	NA	NA	NA	NA	NA	NA
W-WW-Rawlins	Rawlings Water Well	7/13/2006	59.8	NA	NA	NA	175	126	184	NA	NA	NA	NA	NA	NA	780	0.0008 U	0.002 U	0.002 U	0.003 U	0.704 U	0.704 U	0.704 U	0.704 U
W-C-01	May's Ranch Creek (upstream)	7/13/2006	51	NA	NA	NA	133	16.4	60.2	NA	NA	NA	NA	NA	NA	396	0.0008 U	0.002 U	0.002 U	0.003 U	0.679 U	0.679 U	0.679 U	0.679 U
W-C-01	May's Ranch Creek (upstream)	8/23/2006	41.6	NA	NA	NA	282	9.51	141	NA	NA	NA	NA	NA	NA	590	0.0008 U	0.002 U	0.002 U	0.003 U	0.676 U	0.676 U	0.676 U	0.676 U
W-C-01	May's Ranch Creek (upstream)	4/9/2007	43	NA	NA	NA	23.8	4.18	15.8	NA	NA	NA	NA	NA	NA	169	NA	NA	NA	NA	NA	NA	NA	NA
W-C-02	May's Ranch Creek (downstream)	4/9/2007	50	NA	NA	NA	75.6	30.2	43.6	NA	NA	NA	NA	NA	NA	291	NA	NA	NA	NA	NA	NA	NA	NA
W-Q-01	SANCO Quarry Pond	8/30/2006	312	NA	NA	NA	523	383	289	NA	NA	NA	NA	NA	NA	1510	NA	NA	NA	NA	NA	NA	NA	NA
W-Q-01	SANCO Quarry Pond	4/19/2007	1190	NA	NA	NA	803	606	422	NA	NA	NA	NA	NA	NA	2160	NA	NA	NA	NA	NA	NA	NA	NA
W-Q-01-D	SANCO Quarry Pond Duplicate	4/19/2007	1210	NA	NA	NA	809	609	374	NA	NA	NA	NA	NA	NA	2240	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-03	Colorado River Segment 3	7/12/2006	111	NA	NA	NA	624	273	366	NA	NA	NA	NA	NA	NA	1570	0.0008 U	0.002 U	0.002 U	0.003 U	0.694 U	0.694 U	0.694 U	0.694 U
W-RS-03	Colorado River Segment 3	8/29/2006	85.1	NA	NA	NA	313	184	195	NA	NA	NA	NA	NA	NA	965	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-03	Colorado River Segment 3	4/19/2007	119	NA	NA	NA	679	481	368	NA	NA	NA	NA	NA	NA	1870	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-07	Colorado River Segment 7	7/12/2006	102	NA	NA	NA	647	273	388	NA	NA	NA	NA	NA	NA	1600	0.0008 U	0.002 U	0.002 U	0.003 U	0.706 U	0.706 U	0.706 U	0.706 U
W-RS-07	Colorado River Segment 7	8/29/2006	85.8	NA	NA	NA	324	192	196	NA	NA	NA	NA	NA	NA	980	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-07	Colorado River Segment 7	4/18/2007	125	NA	NA	NA	716	531	392	NA	NA	NA	NA	NA	NA	1970	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-08	Colorado River Segment 8	7/12/2006	104	NA	NA	NA	666	358	396	NA	NA	NA	NA	NA	NA	1660	0.0008 U	0.002 U	0.002 U	0.003 U	0.697 U	0.697 U	0.697 U	0.697 U
W-RS-08	Colorado River Segment 8	8/30/2006	NO ACCESS																					
W-RS-08	Colorado River Segment 8	4/19/2007	NO ACCESS																					
W-RS-09	Colorado River Segment 9	7/12/2006	104	NA	NA	NA	713	302	415	NA	NA	NA	NA	NA	NA	1730	0.0008 U	0.002 U	0.002 U	0.003 U	0.671 U	0.671 U	0.671 U	0.671 U
W-RS-09	Colorado River Segment 9	8/30/2006	84.1	NA	NA	NA	380	208	216	NA	NA	NA	NA	NA	NA	1070	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-09	Colorado River Segment 9	4/19/2007	119	NA	NA	NA	738	543	360	NA	NA	NA	NA	NA	NA	2060	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-10	Colorado River Segment 10	7/12/2006	108	NA	NA	NA	735	300	420	NA	NA	NA	NA	NA	NA	1760	0.0008 U	0.002 U	0.002 U	0.003 U	0.693 U	0.693 U	0.693 U	0.693 U
W-RS-10	Colorado River Segment 10	8/30/2006	93.3	NA	NA	NA	428	227	248	NA	NA	NA	NA	NA	NA	1100	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-10	Colorado River Segment 10	4/19/2007	132	NA	NA	NA	784	576	374	NA	NA	NA	NA	NA	NA	2210	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-11	Colorado River Segment 11	7/12/2006	96.7	NA	NA	NA	636	319	379	NA	NA	NA	NA	NA	NA	1550	0.0008 U	0.002 U	0.002 U	0.003 U	0.699 U	0.699 U	0.699 U	0.699 U
W-RS-11	Colorado River Segment 11	8/29/2006	91.6	NA	NA	NA	388	214	252	NA	NA	NA	NA	NA	NA	1110	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-11	Colorado River Segment 11	4/19/2007	135	NA	NA	NA	809	600	403	NA	NA	NA	NA	NA	NA	2260	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-12	Colorado River Segment 12	7/12/2006	91.5	NA	NA	NA	775	325	460	NA	NA	NA	NA	NA	NA	1780	0.0008 U	0.002 U	0.002 U	0.003 U	0.701 U	0.701 U	0.701 U	0.701 U
W-RS-12	Colorado River Segment 12	8/29/2006	90.8	NA	NA	NA	391	226	231	NA	NA	NA	NA	NA	NA	1060	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-12	Colorado River Segment 12	4/19/2007	136	NA	NA	NA	841	632	441	NA	NA	NA	NA	NA	NA	2300	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-13	Colorado River Segment 13	7/12/2006	104	NA	NA	NA	794	319	474	NA	NA	NA	NA	NA	NA	1800	0.0008 U	0.002 U	0.002 U	0.003 U	0.691 U	0.691 U	0.691 U	0.691 U
W-RS-13	Colorado River Segment 13	8/29/2006	98.5	NA	NA	NA	378	208	240	NA	NA	NA	NA	NA	NA	1040	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-13	Colorado River Segment 13	4/19/2007	137	NA	NA	NA	884	643	427	NA	NA	NA	NA	NA	NA	2410	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-14	Colorado River Segment 14	7/14/2006	97.8	NA	NA	NA	859	342	467	NA	NA	NA	NA	NA	NA	2000	0.0008 U	0.002 U	0.002 U	0.003 U	0.673 U	0.673 U	0.673 U	0.673 U
W-RS-14	Colorado River Segment 14	8/29/2006	86.5	NA	NA	NA	364	221	214	NA	NA	NA	NA	NA	NA	1010	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-14	Colorado River Segment 14	4/18/2007	146	NA	NA	NA	899	667	463	NA	NA	NA	NA	NA	NA	2440	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-15	Colorado River Segment 15	7/14/2006	106	NA	NA	NA	906	351	499	NA	NA	NA	NA	NA	NA	2070	0.0008 U	0.002 U	0.002 U	0.003 U	0.686 U	0.686 U	0.686 U	0.686 U
W-RS-15	Colorado River Segment 15	8/29/2006	84	NA	NA	NA	350	211	213	NA	NA	NA	NA	NA	NA	1020	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-15	Colorado River Segment 15	4/18/2007	147	NA	NA	NA	909	665	497	NA	NA	NA	NA	NA	NA	2440	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-16	Colorado River Segment 16	7/14/2006	99.6	NA	NA	NA	909	352	473	NA	NA	NA	NA	NA	NA	2070	0.0008 U	0.002 U	0.002 U	0.003 U	0.69 U	0.69 U	0.69 U	0.69 U
W-RS-16	Colorado River Segment 16	8/29/2006	87.2	NA	NA	NA	338	193	214	NA	NA	NA	NA	NA	NA	1020	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-16	Colorado River Segment 16	4/18/2007	140	NA	NA	NA	930	677	454	NA	NA	NA	NA	NA	NA	2480	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-17	Colorado River Segment 17	7/14/2006	98	NA	NA	NA	899	354	471	NA	NA	NA	NA	NA	NA	2050	0.0008 U	0.002 U	0.002 U	0.003 U	0.691 U	0.691 U	0.691 U	0.691 U
W-RS-17	Colorado River Segment 17	8/29/2006	84.9	NA	NA	NA	338	185	212	NA	NA	NA	NA	NA	NA	1010	NA	NA	NA	NA	NA	NA	NA	NA
W-RS-17	Colorado River Segment 17	4/18/2007	148	NA	NA	NA	948	677	483	NA	NA	NA	NA	NA	NA	2470	NA	NA	NA	NA	NA	NA	NA	NA
W-SG-4314102-01	Spring 4314102 - West side of spring	7/13/2006	61.2	NA	NA	NA	4400	2300	168	NA	NA	NA	NA	NA	NA	9980	0.0008 U	0.002 U	0.002 U	0.003 U	0.699 U	0.699 U	0.699 U	0.699 U
W-SG-4314102	Spring 4314102 - West side of spring	8/28/2006	858	NA	NA	NA	7640	2480	2760	NA	NA	NA	NA	NA	NA	15300	0.0008 U	0.002 U	0.002 U	0.003 U	0.663 U	0.663 U	0.663 U	0.663 U
W-SG-4314102-01	Spring 4314102 - West side of spring	4/9/2007	882	NA	NA	NA	6280	2710	2750	NA	NA	NA	NA	NA	NA	12200	NA	NA	NA	NA	NA	NA	NA	NA
W-SG-4314102-02	Spring 4314102 - East side of spring	4/9/2007	21.3	NA	NA	NA	0.658 J	1.42 J	2.31	NA	NA	NA	NA	NA	NA	179	NA	NA	NA	NA	NA	NA	NA	NA
W-SG-4314104-01	Spring 4314104	7/14/2006	694	NA	NA	NA	4660	19100	7640	NA	NA	NA	NA	NA	NA	31900	0.0008 U	0.002 U	0.002 U	0.003 U	0.674 U	0.674 U	0.674 U	0.674 U
W-SG-4314104	Spring 4314104	8/29/2006	487	NA	NA	NA	4360	19000	6770	NA	NA	NA	NA	NA	NA	31800	0.0008 U	0.002 U	0.002 U	0.003 U	0.657 U	0.657 U	0.657 U	0.657 U
W-SG-4314104-D	Spring 4314104 Duplicate	8/29/2006	506	NA	NA	NA	4150	18000	6090	NA	NA	NA	NA	NA	NA	31000	NA	NA	NA	NA	NA	NA	NA	NA
W-SG-4314104	Spring 4314104	4/11/2007	352	NA	NA	NA	1070	4660	2030	NA	NA	NA	NA	NA	NA	8650	NA	NA	NA	NA	NA	NA	NA	NA
W-SP-01	May's Ranch Seep	7/13/2006	84.3	NA	NA	NA	508	461	393	NA	NA	NA	NA	NA	NA	1630	0.0008 U	0.002 U	0.002 U	0.003 U	0.716 U	0.716 U	0.716 U	0.716 U
W-SP-01	May's Ranch Seep	8/23/2006	95.2	NA	NA	NA	503	471	384	NA	NA	NA	NA	NA	NA	1650	0.0008 U	0.002 U	0.002 U	0.003 U	0.676 U	0.676 U	0.676 U	0.676 U
W-SP-01	May's Ranch Seep	4/9/2007	87.3	NA	NA	NA	368	393	304	NA	NA	NA	NA	NA	NA	1330	NA	NA	NA	NA	NA	NA	NA	NA
W-T-01	Wendkirk Oil Field Produced Water Tank	4/16/2007	8160	NA	NA	NA	89900	224	38300	NA	NA	NA	NA	NA	NA	138000	0.326	0.278	0.0485	0.273	12.2	1.19 J	12.9	26.3

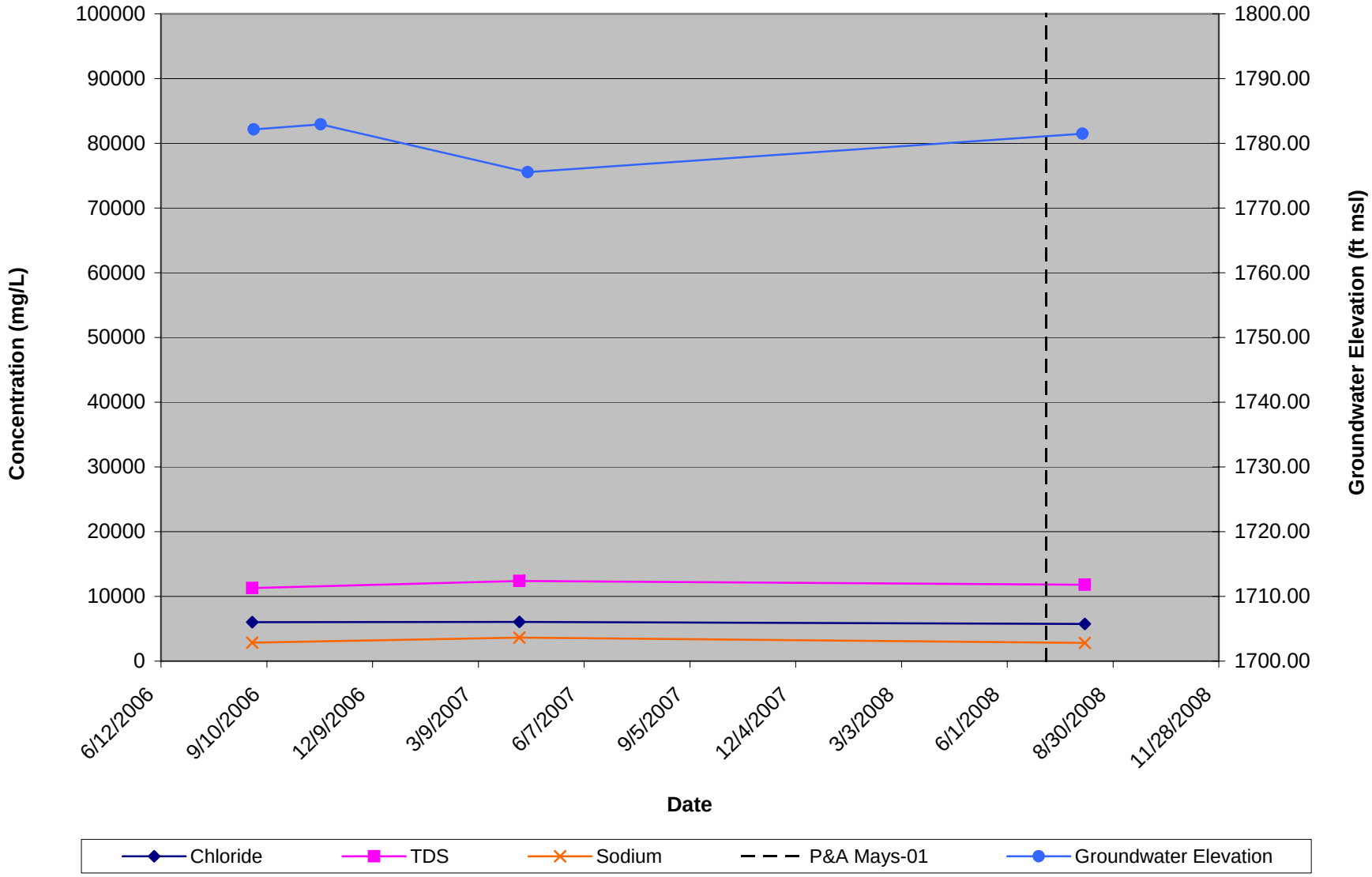
Notes
mg/L = milligrams per liter
U = analyte not detected
J = estimated concentration
NA = not analyzed
* = Grab sample for qualitative analysis only

GRAPHS

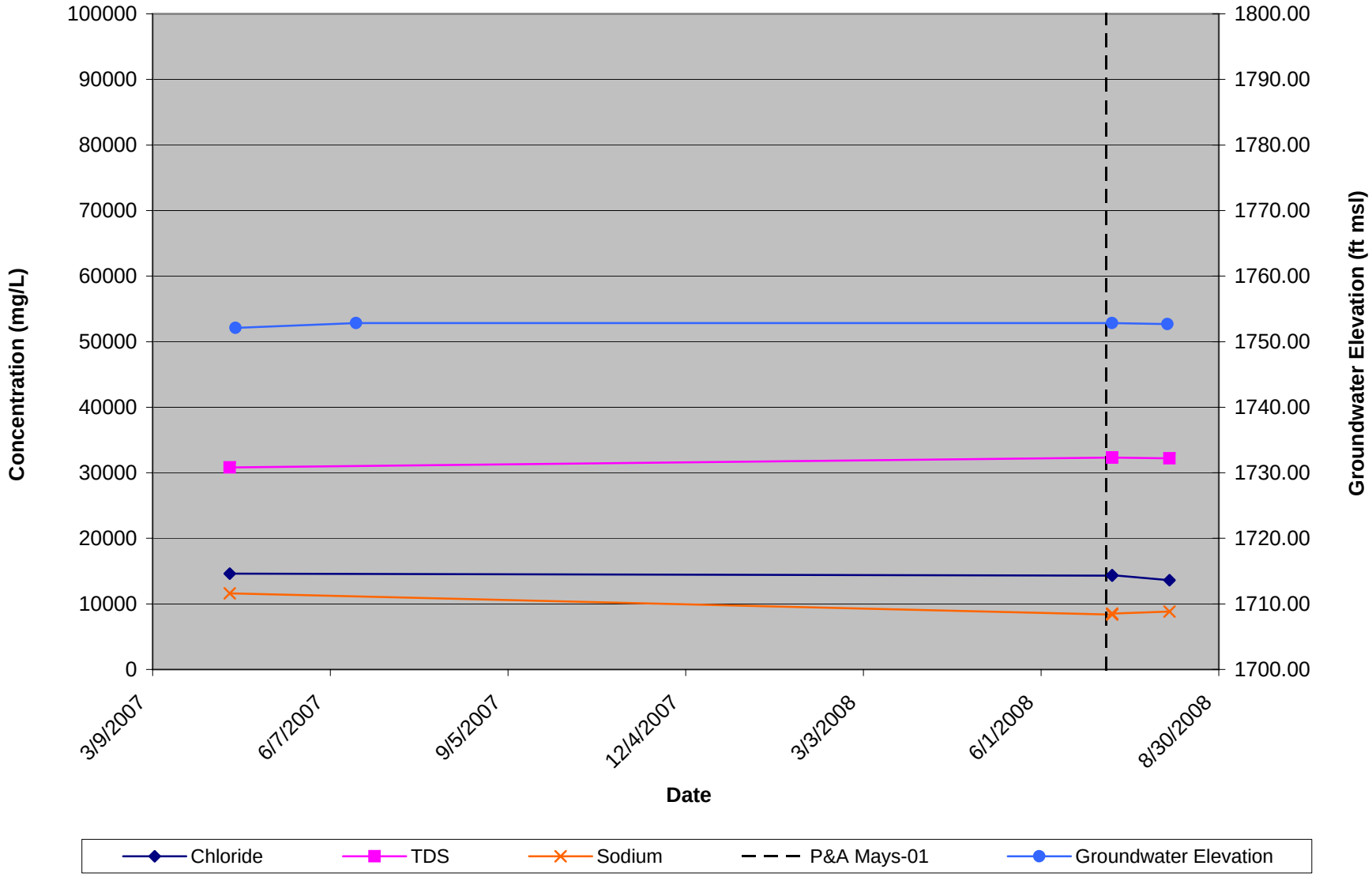
GRAPH 1. MW-05 Concentrations and Groundwater Elevations



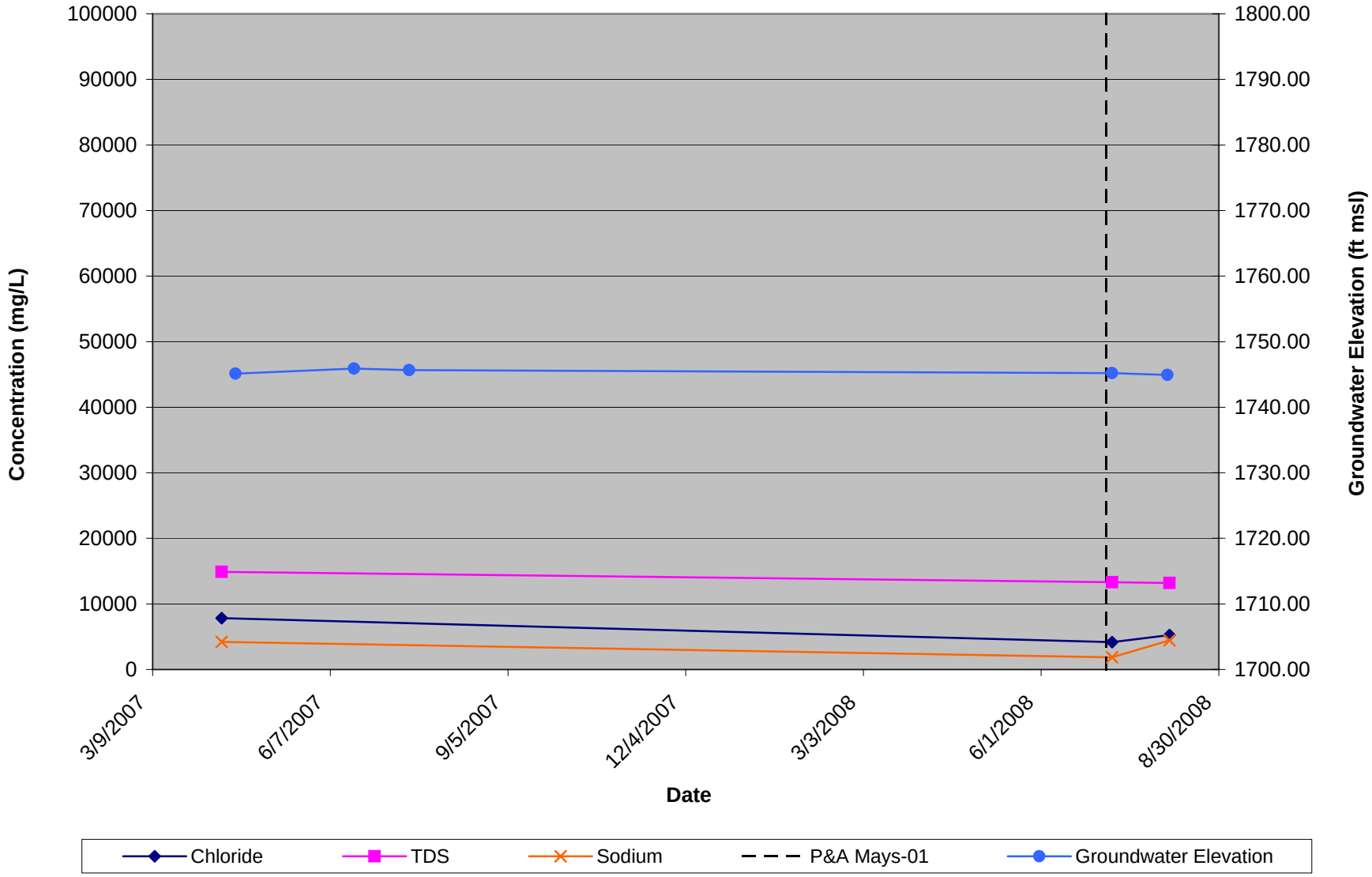
GRAPH 2. MW-06 Concentrations and Groundwater Elevations



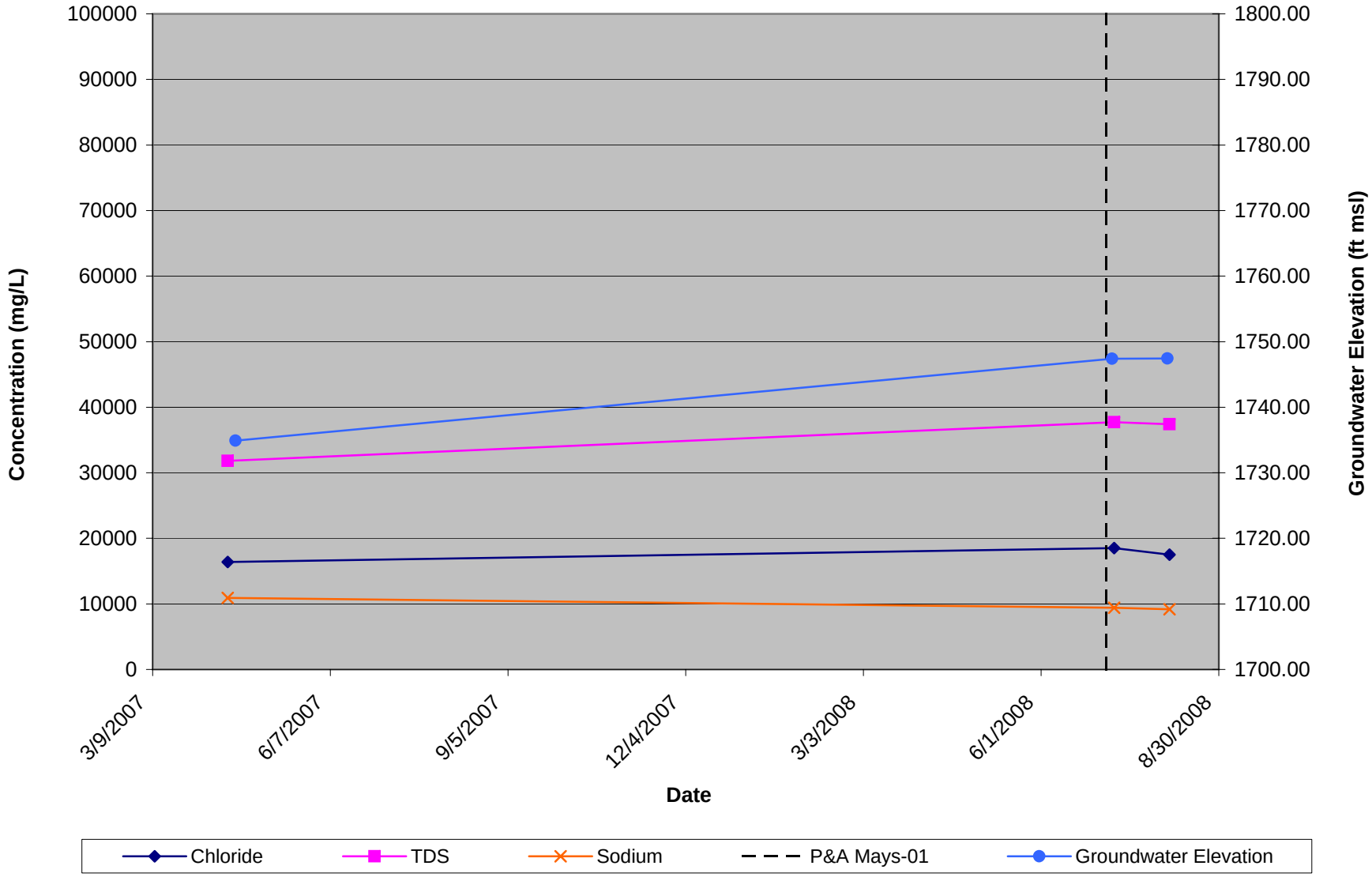
GRAPH 3. MW-10 Concentrations and Groundwater Elevations



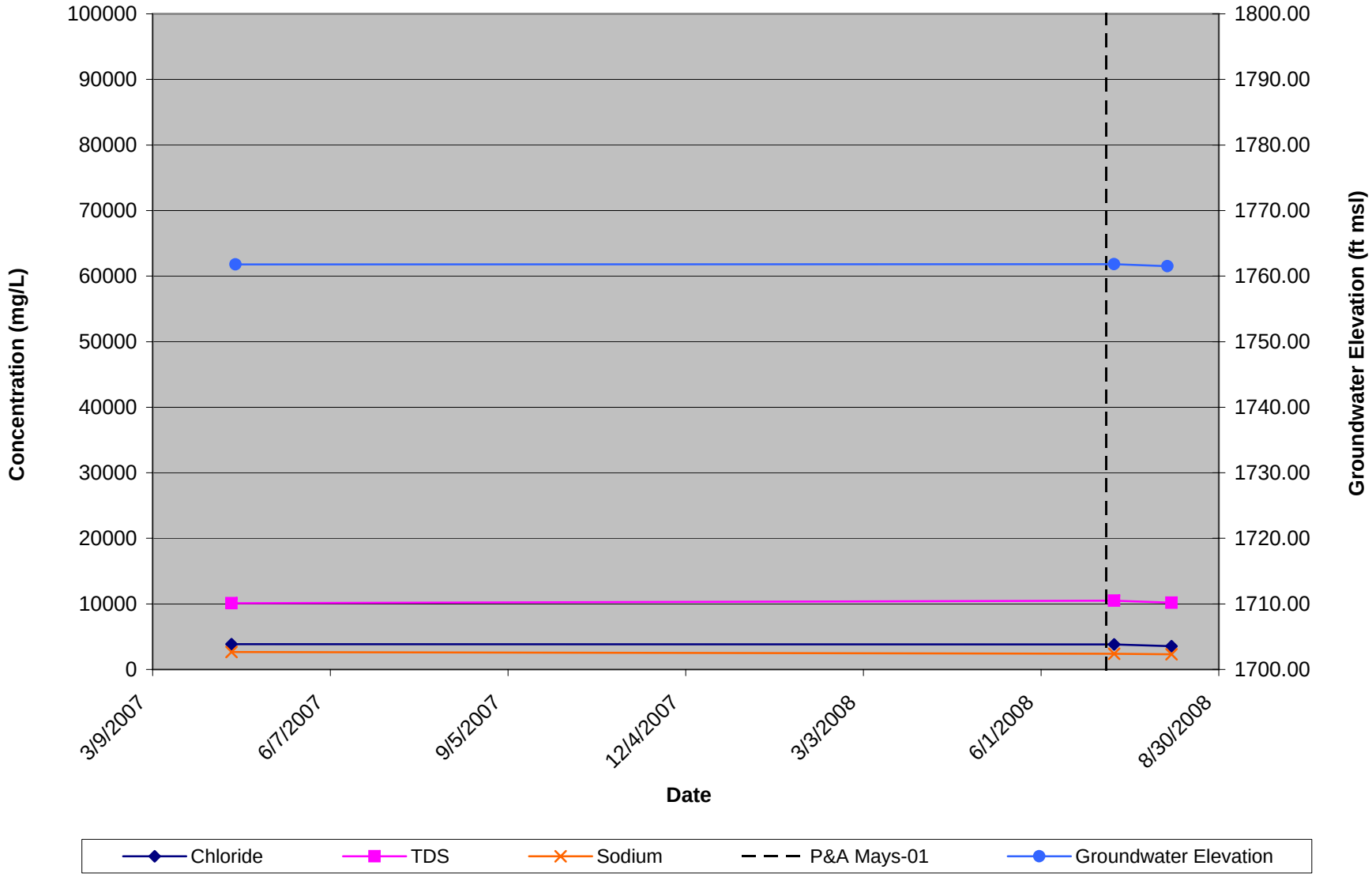
GRAPH 4. MW-11 Concentrations and Groundwater Elevations



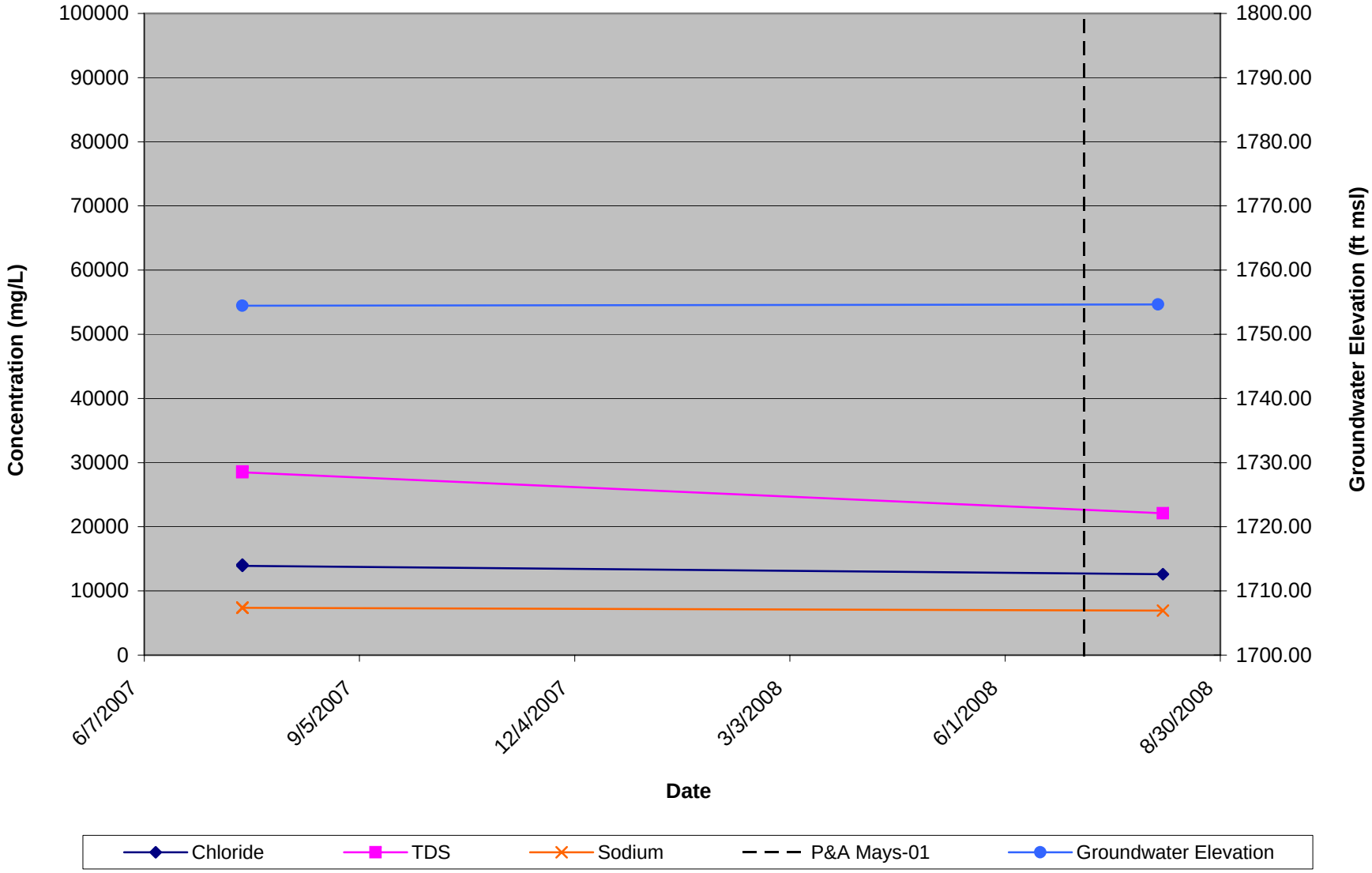
GRAPH 5. MW-12 Concentrations and Groundwater Elevations



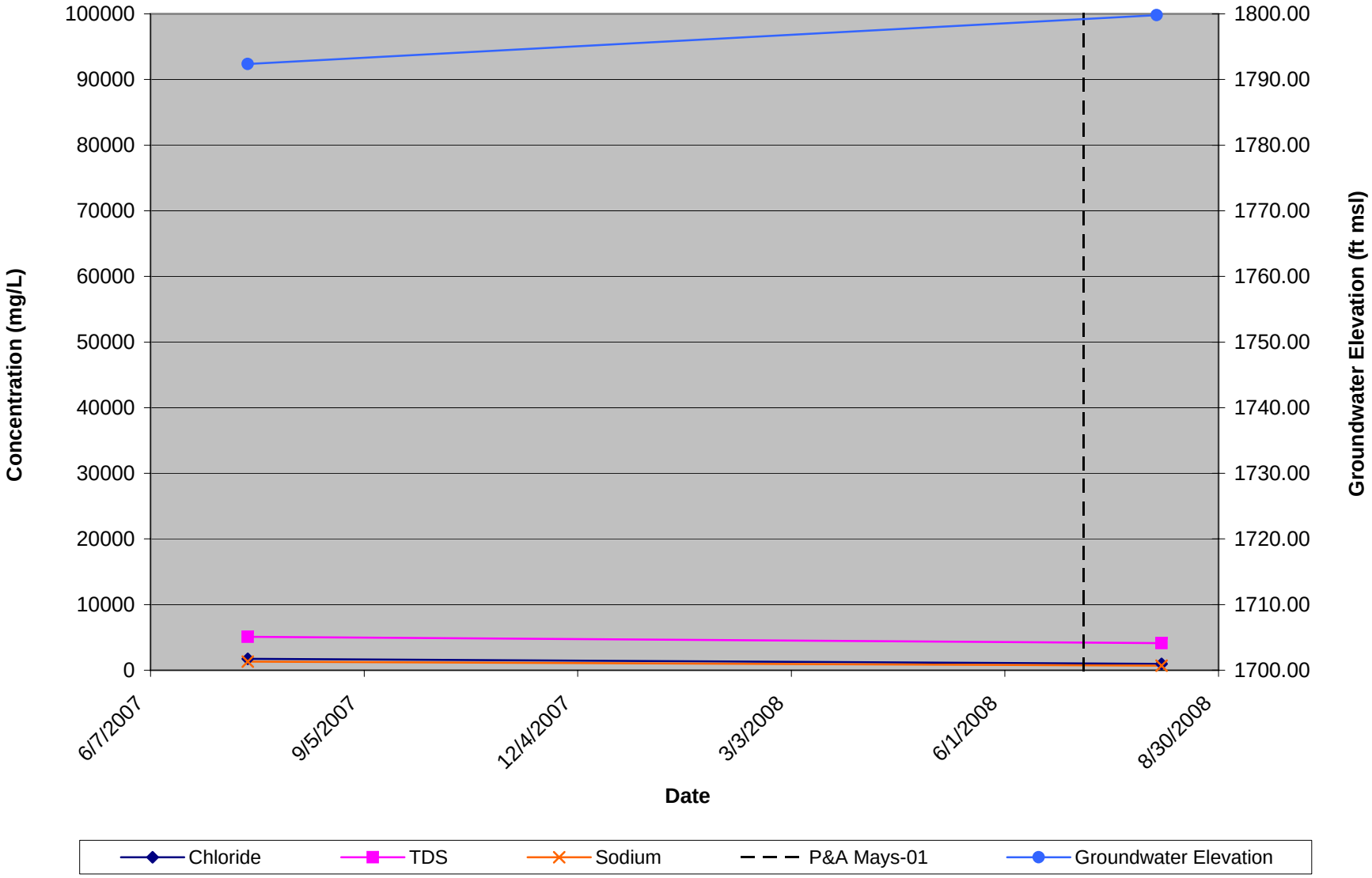
GRAPH 6. MW-17 Concentrations and Groundwater Elevations



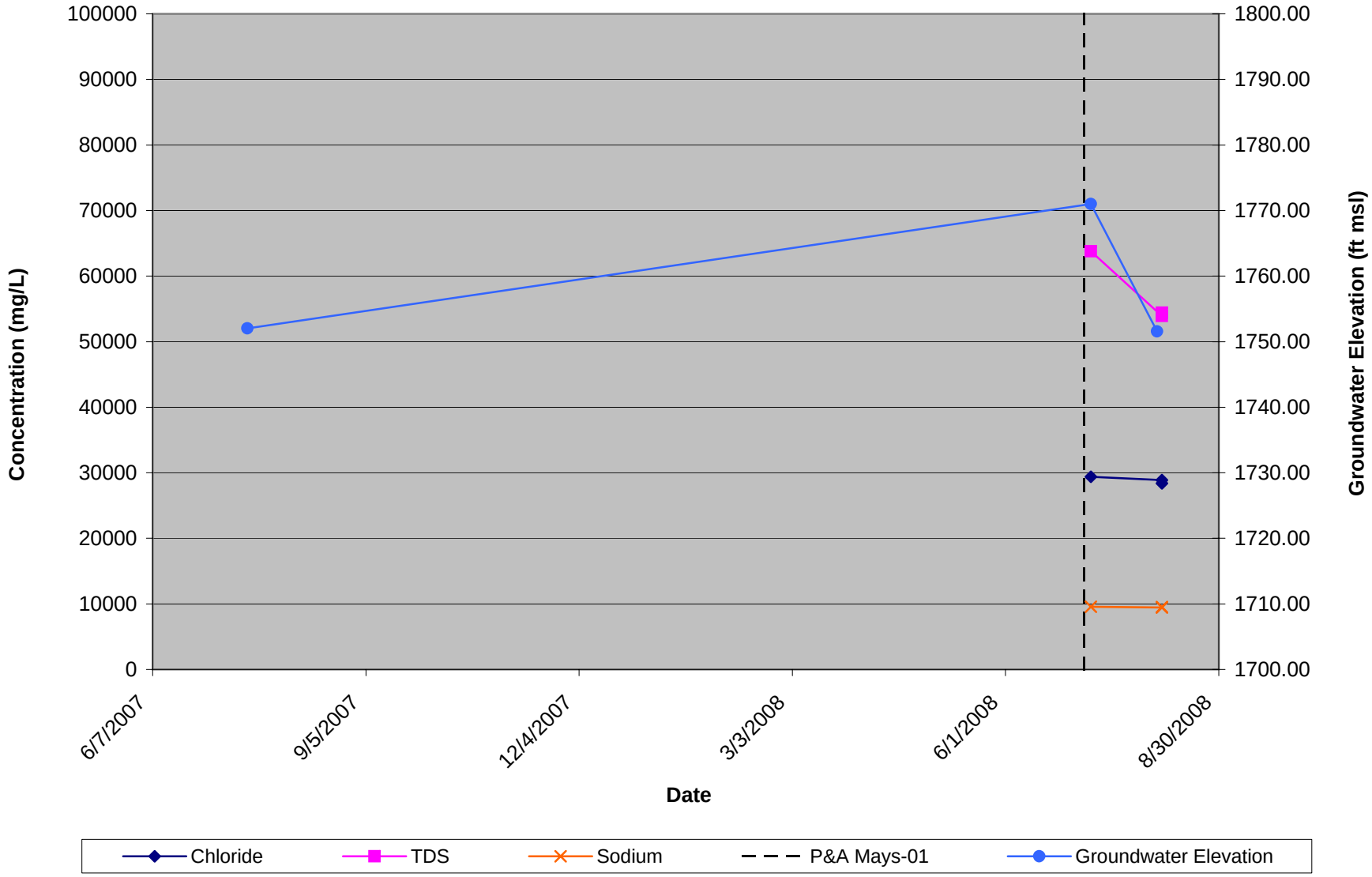
GRAPH 7. MW-19 Concentrations and Groundwater Elevations



GRAPH 8. MW-20 Concentrations and Groundwater Elevations



GRAPH 9. OW-01 Concentrations and Groundwater Elevations



APPENDIX A

LABORATORY ANALYTICAL DATA REPORTS AND CHAIN-OF-CUSTODY FORMS

(NOTE: COPIES OF THE LABORATORY ANALYTICAL DATA ARE NOT INCLUDED IN THIS REPORT BUT ARE AVAIALBLE AT HTTP://WWW.RRC.STATE.TX.US/DIVISIONS/OG/SITE_REM/NPS/LOWER/INDEX.HTML)

August 13, 2008

Arsin Sahba
TRC Environmental Corp.
505 East Huntland Drive Suite 250
Austin, Texas 78752

TEL: (512) 329-6080
FAX: (512) 329-8750

Order No: 0808056

RE: RRC -Wendkirk BMP

Dear Arsin Sahba:

DHL Analytical received 13 sample(s) on 8/7/2008 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
Lab Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-08A-TX

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DHL ANALYTICAL

2300 Double Creek Drive • Round Rock, TX 78664
Phone (512) 388-8222 • FAX (512) 388-8229

№ 37500

CHAIN-OF-CUSTODY

CLIENT: TRC
ADDRESS: 505 E Huntland Dr Ste 250 Austin TX 78752
PHONE: (512) 329-6080 FAX
DATA REPORTED TO: Arsin Sahba asahba@trcsolutions.com
ADDITIONAL REPORT COPIES TO: — scmiller@trcsolutions.com

DATE: 8/6/08 PAGE 1 OF 2
PO #: 161638.0000.0000.00001 DHL WORK ORDER #: 0808056
PROJECT LOCATION OR NAME: RRC - Wendkirk
CLIENT PROJECT #: 161638 COLLECTOR: BC/TK

Authorize 5% surcharge for TRRP report? ☐Yes ☒No

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO3	H2SO4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TPPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☒ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☐ ANIONS ☐ ALKALINITY ☒	Alkalinity (Chloride sulfate, Bromide)	Cations (Ca, Na, Mg, K)	Conductivity	FIELD NOTES
W-MW-14	01	8/6/08	1030	W	250ml 500ml	4		X		X	X													X	X		X	X	X	X	Alkalinity = Carbonate
W-WW-4313302	02	8/6/08	1120	W	↓	4		X		X	X													X	X		X	X	X	X	+ Bicarbonate
W-WW-081	03	8/6/08	1210	W		4		X		X	X													X	X		X	X	X	X	
W-MW-20	04	8/6/08	1315	W		4		X		X	X													X	X		X	X	X	X	
W-MW-17	05	8/6/08	1410	W	↓	4		X		X	X													X	X		X	X	X	X	
TOTAL						20																											

** In accordance with Colorado River RRC-TRC QAPP **

RELINQUISHED BY: (Signature) DATE/TIME 1416 8/6/08 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) 1336 DATE/TIME 8/7/08 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☐
OTHER ☒ 3-day

LABORATORY USE ONLY:
RECEIVING TEMP: 4.1/5.4 ° THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED
☐ CARRIER BILL # _____
☐ APC DELIVERY
☒ HAND DELIVERED

DHL ANALYTICAL

2300 Double Creek Drive • Round Rock, TX 78664
Phone (512) 388-8222 • FAX (512) 388-8229

№ 37091

CHAIN-OF-CUSTODY

CLIENT: TRC
ADDRESS: 505 E. HUNTLAND DRIVE #250
PHONE: (512) 329-6080 FAX 329-8750
DATA REPORTED TO: smiller@trcsolutions.com / asalbe@trcsolutions.com
ADDITIONAL REPORT COPIES TO: cmansuri@trcsolutions.com

DATE: 8/5/08 PAGE 2 OF 2
PO #: 161638.0000.0000.0001 DHL WORK ORDER #: 0808056
PROJECT LOCATION OR NAME: WENDKIRK BMP
CLIENT PROJECT #: 161638 COLLECTOR: C. MANSURI

Authorize 5% surcharge for TRRP report? ☐ Yes ☑ No

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☐ | DIESEL - MOD 8015 ☐ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☑ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☑ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☐ ANIONS ☐ ALKALINITY ☑ | ANIONS (Chloride, Sulfate, Bromide) CATIONS (Na, Ca, Mg, K) | ELECTRICAL CONDUCTIVITY

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 NaOH	ICE	UNPRESERVED	TDS	pH	ANIONS / CATIONS	FIELD NOTES
W-MW-05	06	8/5/08	1706	W	500(1) 250(3)	4		X		X	X	X	X	X	*Alkalinity include
W-MW-10	07	8/5/08	1725	W		4		X		X	X	X	X	X	Bicarbonate and
W-MW-12	08	8/5/08	1808	W		4		X		X	X	X	X	X	Carbonate.
W-MW-06	09	8/6/08	1130	W		4		X		X	X	X	X	X	
W-MW-18	10	8/6/08	1310	W		4		X		X	X	X	X	X	
W-OW-01	11	8/6/08	1545	W		4		X		X	X	X	X	X	
W-OW-01-D	12	8/6/08	1545	W		4		X		X	X	X	X	X	
W-MW-19	13	8/6/08	1652	W		4		X		X	X	X	X	X	
															XX NOTE ***
															In accordance
															with Colorado
															River RRC-TRC
															GAPP
															***
TOTAL						32									

RELINQUISHED BY: (Signature) 1336 DATE/TIME 8/7/2008 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☐ TAT
OTHER ☑ 3-Days

LABORATORY USE ONLY:
RECEIVING TEMP: 4.1°/5.4° THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ APC DELIVERY
☑ HAND DELIVERED

DHL Analytical

Sample Receipt Checklist

Client Name **TRC Environmental Corp.** Date Received: **8/7/2008**

Work Order Number **0808056** Received by **GW**

Checklist completed by: JBarker 8/7/08 (Signature / Date) Reviewed by DL (Initials) 8/7/08 (Date)

Carrier name: Hand Delivered

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Adjusted? ND Checked by JB

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Page 1 of 1

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Method E300 - Anions Analyis
Method SW6020 - Metals Analysis
Method M2320 B (18th edition) - Alkalinity Analysis
Method M2540C (18th edition) - TDS Analysis
Method M2540 B (18th edition) - Specific Conductance
Method M450-H+ B (18th edition) - pH of a Water

LOG IN

Samples were received and log-in performed on 8/7/08. A total of 13 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 8/11/08 the matrix spike and matrix spike duplicate recoveries were out of control limits for some analytes. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.

ANIONS ANALYSIS

For Anions analysis performed on 8/8/08 the matrix spike and matrix spike duplicate recoveries (0808056-02B MS/MSD) were below control limits for Bromide. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recv'd
0808056-01	W-MW-14		08/06/08 10:30 AM	08/07/08
0808056-02	W-WW-4313302		08/06/08 11:20 AM	08/07/08
0808056-03	W-WW-081		08/06/08 12:10 PM	08/07/08
0808056-04	W-MW-20		08/06/08 01:15 PM	08/07/08
0808056-05	W-MW-17		08/06/08 02:10 PM	08/07/08
0808056-06	W-MW-05		08/05/08 05:06 PM	08/07/08
0808056-07	W-MW-10		08/05/08 05:25 PM	08/07/08
0808056-08	W-MW-12		08/05/08 06:08 PM	08/07/08
0808056-09	W-MW-06		08/06/08 11:30 AM	08/07/08
0808056-10	W-MW-18		08/06/08 01:10 PM	08/07/08
0808056-11	W-OW-01		08/06/08 03:45 PM	08/07/08
0808056-12	W-OW-01-D		08/06/08 03:45 PM	08/07/08
0808056-13	W-MW-19		08/06/08 04:52 PM	08/07/08

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
0808056-01A	W-MW-14	08/06/08 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-MW-14	08/06/08 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-01B	W-MW-14	08/06/08 10:30 AM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-MW-14	08/06/08 10:30 AM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-MW-14	08/06/08 10:30 AM	Aqueous	M2320 B	Alkalinity	08/08/08 09:30 AM	R39081
0808056-01C	W-MW-14	08/06/08 10:30 AM	Aqueous	M4500-H+ B	pH	08/07/08 03:23 PM	R39062
0808056-01D	W-MW-14	08/06/08 10:30 AM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-MW-14	08/06/08 10:30 AM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-02A	W-WW-4313302	08/06/08 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-WW-4313302	08/06/08 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-02B	W-WW-4313302	08/06/08 11:20 AM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-WW-4313302	08/06/08 11:20 AM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-WW-4313302	08/06/08 11:20 AM	Aqueous	M2320 B	Alkalinity	08/08/08 01:45 PM	R39081
0808056-02C	W-WW-4313302	08/06/08 11:20 AM	Aqueous	M4500-H+ B	pH	08/07/08 03:24 PM	R39062
0808056-02D	W-WW-4313302	08/06/08 11:20 AM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-WW-4313302	08/06/08 11:20 AM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-03A	W-WW-081	08/06/08 12:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-WW-081	08/06/08 12:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-WW-081	08/06/08 12:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-03B	W-WW-081	08/06/08 12:10 PM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-WW-081	08/06/08 12:10 PM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-WW-081	08/06/08 12:10 PM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-WW-081	08/06/08 12:10 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-WW-081	08/06/08 12:10 PM	Aqueous	M2320 B	Alkalinity	08/08/08 09:45 AM	R39081
0808056-03C	W-WW-081	08/06/08 12:10 PM	Aqueous	M4500-H+ B	pH	08/07/08 03:25 PM	R39062
0808056-03D	W-WW-081	08/06/08 12:10 PM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-WW-081	08/06/08 12:10 PM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-04A	W-MW-20	08/06/08 01:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-MW-20	08/06/08 01:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
	W-MW-20	08/06/08 01:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-04B	W-MW-20	08/06/08 01:15 PM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-MW-20	08/06/08 01:15 PM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-MW-20	08/06/08 01:15 PM	Aqueous	E300	Anions by IC method - Water	08/13/08	R39137
	W-MW-20	08/06/08 01:15 PM	Aqueous	M2320 B	Alkalinity	08/08/08 09:59 AM	R39081
0808056-04C	W-MW-20	08/06/08 01:15 PM	Aqueous	M4500-H+ B	pH	08/07/08 03:27 PM	R39062
0808056-04D	W-MW-20	08/06/08 01:15 PM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-MW-20	08/06/08 01:15 PM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-05A	W-MW-17	08/06/08 02:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-MW-17	08/06/08 02:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-05B	W-MW-17	08/06/08 02:10 PM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-MW-17	08/06/08 02:10 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-17	08/06/08 02:10 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-17	08/06/08 02:10 PM	Aqueous	E300	Anions by IC method - Water	08/13/08	R39137
	W-MW-17	08/06/08 02:10 PM	Aqueous	M2320 B	Alkalinity	08/08/08 10:08 AM	R39081
0808056-05C	W-MW-17	08/06/08 02:10 PM	Aqueous	M4500-H+ B	pH	08/07/08 03:28 PM	R39062
0808056-05D	W-MW-17	08/06/08 02:10 PM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-MW-17	08/06/08 02:10 PM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-06A	W-MW-05	08/05/08 05:06 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-MW-05	08/05/08 05:06 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-06B	W-MW-05	08/05/08 05:06 PM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-MW-05	08/05/08 05:06 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-05	08/05/08 05:06 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-05	08/05/08 05:06 PM	Aqueous	M2320 B	Alkalinity	08/08/08 10:28 AM	R39081
0808056-06C	W-MW-05	08/05/08 05:06 PM	Aqueous	M4500-H+ B	pH	08/07/08 03:29 PM	R39062
0808056-06D	W-MW-05	08/05/08 05:06 PM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-MW-05	08/05/08 05:06 PM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-07A	W-MW-10	08/05/08 05:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-MW-10	08/05/08 05:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
0808056-07B	W-MW-10	08/05/08 05:25 PM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-MW-10	08/05/08 05:25 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-10	08/05/08 05:25 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-10	08/05/08 05:25 PM	Aqueous	M2320 B	Alkalinity	08/08/08 10:42 AM	R39081
0808056-07C	W-MW-10	08/05/08 05:25 PM	Aqueous	M4500-H+ B	pH	08/07/08 03:30 PM	R39062
0808056-07D	W-MW-10	08/05/08 05:25 PM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-MW-10	08/05/08 05:25 PM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-08A	W-MW-12	08/05/08 06:08 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-MW-12	08/05/08 06:08 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-08B	W-MW-12	08/05/08 06:08 PM	Aqueous	E300	Anions by IC method - Water	08/08/08	R39086
	W-MW-12	08/05/08 06:08 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-12	08/05/08 06:08 PM	Aqueous	M2320 B	Alkalinity	08/08/08 01:57 PM	R39081
0808056-08C	W-MW-12	08/05/08 06:08 PM	Aqueous	M4500-H+ B	pH	08/07/08 03:31 PM	R39062
0808056-08D	W-MW-12	08/05/08 06:08 PM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-MW-12	08/05/08 06:08 PM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-09A	W-MW-06	08/06/08 11:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-MW-06	08/06/08 11:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-09B	W-MW-06	08/06/08 11:30 AM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-06	08/06/08 11:30 AM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-06	08/06/08 11:30 AM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-06	08/06/08 11:30 AM	Aqueous	M2320 B	Alkalinity	08/08/08 11:04 AM	R39081
0808056-09C	W-MW-06	08/06/08 11:30 AM	Aqueous	M4500-H+ B	pH	08/07/08 03:32 PM	R39062
0808056-09D	W-MW-06	08/06/08 11:30 AM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-MW-06	08/06/08 11:30 AM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-10A	W-MW-18	08/06/08 01:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-MW-18	08/06/08 01:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-10B	W-MW-18	08/06/08 01:10 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-18	08/06/08 01:10 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-18	08/06/08 01:10 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
	W-MW-18	08/06/08 01:10 PM	Aqueous	M2320 B	Alkalinity	08/08/08 11:15 AM	R39081
0808056-10C	W-MW-18	08/06/08 01:10 PM	Aqueous	M4500-H+ B	pH	08/07/08 03:36 PM	R39062
0808056-10D	W-MW-18	08/06/08 01:10 PM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-MW-18	08/06/08 01:10 PM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-11A	W-OW-01	08/06/08 03:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-OW-01	08/06/08 03:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-11B	W-OW-01	08/06/08 03:45 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-OW-01	08/06/08 03:45 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-OW-01	08/06/08 03:45 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-OW-01	08/06/08 03:45 PM	Aqueous	M2320 B	Alkalinity	08/08/08 11:30 AM	R39081
0808056-11C	W-OW-01	08/06/08 03:45 PM	Aqueous	M4500-H+ B	pH	08/07/08 03:37 PM	R39062
0808056-11D	W-OW-01	08/06/08 03:45 PM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-OW-01	08/06/08 03:45 PM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-12A	W-OW-01-D	08/06/08 03:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-OW-01-D	08/06/08 03:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-12B	W-OW-01-D	08/06/08 03:45 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-OW-01-D	08/06/08 03:45 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-OW-01-D	08/06/08 03:45 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-OW-01-D	08/06/08 03:45 PM	Aqueous	M2320 B	Alkalinity	08/08/08 11:42 AM	R39081
0808056-12C	W-OW-01-D	08/06/08 03:45 PM	Aqueous	M4500-H+ B	pH	08/07/08 03:39 PM	R39062
0808056-12D	W-OW-01-D	08/06/08 03:45 PM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-OW-01-D	08/06/08 03:45 PM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08
0808056-13A	W-MW-19	08/06/08 04:52 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-MW-19	08/06/08 04:52 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
	W-MW-19	08/06/08 04:52 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/08/08 09:46 AM	31267
0808056-13B	W-MW-19	08/06/08 04:52 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-19	08/06/08 04:52 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-19	08/06/08 04:52 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-19	08/06/08 04:52 PM	Aqueous	M2320 B	Alkalinity	08/08/08 12:03 PM	R39081

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
0808056-13C	W-MW-19	08/06/08 04:52 PM	Aqueous	M4500-H+ B	pH	08/07/08 03:40 PM	R39062
0808056-13D	W-MW-19	08/06/08 04:52 PM	Aqueous	M2510 B	Specific Conductance	08/08/08	CONDW-8/8/08
	W-MW-19	08/06/08 04:52 PM	Aqueous	M2540C	Total Dissolved Solids	08/08/08 02:30 PM	TDS_W-8/8/08

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
0808056-01A	W-MW-14	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 08:54 PM	ICP-MS3_080811A
	W-MW-14	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	50	08/12/08 02:09 PM	ICP-MS3_080812A
0808056-01B	W-MW-14	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 09:30 AM	TITRATOR_080808A
	W-MW-14	Aqueous	E300	Anions by IC method - Water	R39086	100	08/08/08 11:15 AM	IC2_080808A
	W-MW-14	Aqueous	E300	Anions by IC method - Water	R39086	200	08/08/08 01:59 PM	IC2_080808A
0808056-01C	W-MW-14	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:23 PM	TITRATOR_080807C
0808056-01D	W-MW-14	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	5	08/08/08 10:40 AM	WC_080808A
	W-MW-14	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-02A	W-WW-4313302	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 08:59 PM	ICP-MS3_080811A
	W-WW-4313302	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	20	08/12/08 02:14 PM	ICP-MS3_080812A
0808056-02B	W-WW-4313302	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 01:45 PM	TITRATOR_080808A
	W-WW-4313302	Aqueous	E300	Anions by IC method - Water	R39086	1	08/08/08 11:29 AM	IC2_080808A
	W-WW-4313302	Aqueous	E300	Anions by IC method - Water	R39086	10	08/08/08 11:44 AM	IC2_080808A
0808056-02C	W-WW-4313302	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:24 PM	TITRATOR_080807C
0808056-02D	W-WW-4313302	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	1	08/08/08 10:40 AM	WC_080808A
	W-WW-4313302	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-03A	W-WW-081	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 08:28 PM	ICP-MS3_080811A
	W-WW-081	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/12/08 12:05 PM	ICP-MS3_080812A
	W-WW-081	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	100	08/12/08 01:33 PM	ICP-MS3_080812A
0808056-03B	W-WW-081	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 09:45 AM	TITRATOR_080808A
	W-WW-081	Aqueous	E300	Anions by IC method - Water	R39086	100	08/08/08 12:31 PM	IC2_080808A
	W-WW-081	Aqueous	E300	Anions by IC method - Water	R39086	10	08/08/08 02:14 PM	IC2_080808A
	W-WW-081	Aqueous	E300	Anions by IC method - Water	R39086	200	08/08/08 02:28 PM	IC2_080808A
	W-WW-081	Aqueous	E300	Anions by IC method - Water	R39093	500	08/11/08 10:18 AM	IC2_080811A
0808056-03C	W-WW-081	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:25 PM	TITRATOR_080807C
0808056-03D	W-WW-081	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	5	08/08/08 10:40 AM	WC_080808A
	W-WW-081	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-04A	W-MW-20	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 09:36 PM	ICP-MS3_080811A
	W-MW-20	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	100	08/12/08 12:52 PM	ICP-MS3_080812A

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
	W-MW-20	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	10	08/12/08 02:20 PM	ICP-MS3_080812A
0808056-04B	W-MW-20	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 09:59 AM	TITRATOR_080808A
	W-MW-20	Aqueous	E300	Anions by IC method - Water	R39086	1	08/08/08 12:13 PM	IC2_080808A
	W-MW-20	Aqueous	E300	Anions by IC method - Water	R39086	100	08/08/08 02:43 PM	IC2_080808A
	W-MW-20	Aqueous	E300	Anions by IC method - Water	R39137	100	08/13/08 10:04 AM	IC2_080813A
0808056-04C	W-MW-20	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:27 PM	TITRATOR_080807C
0808056-04D	W-MW-20	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	1	08/08/08 10:40 AM	WC_080808A
	W-MW-20	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-05A	W-MW-17	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 09:41 PM	ICP-MS3_080811A
	W-MW-17	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	100	08/12/08 02:04 PM	ICP-MS3_080812A
0808056-05B	W-MW-17	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 10:08 AM	TITRATOR_080808A
	W-MW-17	Aqueous	E300	Anions by IC method - Water	R39086	1	08/08/08 02:58 PM	IC2_080808A
	W-MW-17	Aqueous	E300	Anions by IC method - Water	R39093	500	08/11/08 10:32 AM	IC2_080811A
	W-MW-17	Aqueous	E300	Anions by IC method - Water	R39093	100	08/11/08 10:47 AM	IC2_080811A
	W-MW-17	Aqueous	E300	Anions by IC method - Water	R39137	100	08/13/08 10:18 AM	IC2_080813A
0808056-05C	W-MW-17	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:28 PM	TITRATOR_080807C
0808056-05D	W-MW-17	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	5	08/08/08 10:40 AM	WC_080808A
	W-MW-17	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-06A	W-MW-05	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 09:46 PM	ICP-MS3_080811A
	W-MW-05	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	100	08/12/08 01:48 PM	ICP-MS3_080812A
0808056-06B	W-MW-05	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 10:28 AM	TITRATOR_080808A
	W-MW-05	Aqueous	E300	Anions by IC method - Water	R39086	5	08/08/08 03:12 PM	IC2_080808A
	W-MW-05	Aqueous	E300	Anions by IC method - Water	R39093	50	08/11/08 11:02 AM	IC2_080811A
	W-MW-05	Aqueous	E300	Anions by IC method - Water	R39093	500	08/11/08 11:16 AM	IC2_080811A
0808056-06C	W-MW-05	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:29 PM	TITRATOR_080807C
0808056-06D	W-MW-05	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	5	08/08/08 10:40 AM	WC_080808A
	W-MW-05	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-07A	W-MW-10	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 09:51 PM	ICP-MS3_080811A
	W-MW-10	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	100	08/12/08 01:54 PM	ICP-MS3_080812A

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
0808056-07B	W-MW-10	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 10:42 AM	TITRATOR_080808A
	W-MW-10	Aqueous	E300	Anions by IC method - Water	R39086	5	08/08/08 03:27 PM	IC2_080808A
	W-MW-10	Aqueous	E300	Anions by IC method - Water	R39093	50	08/11/08 11:31 AM	IC2_080811A
	W-MW-10	Aqueous	E300	Anions by IC method - Water	R39093	500	08/11/08 11:46 AM	IC2_080811A
0808056-07C	W-MW-10	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:30 PM	TITRATOR_080807C
0808056-07D	W-MW-10	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	5	08/08/08 10:40 AM	WC_080808A
	W-MW-10	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-08A	W-MW-12	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 09:57 PM	ICP-MS3_080811A
	W-MW-12	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	100	08/12/08 01:59 PM	ICP-MS3_080812A
0808056-08B	W-MW-12	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 01:57 PM	TITRATOR_080808A
	W-MW-12	Aqueous	E300	Anions by IC method - Water	R39086	5	08/08/08 03:42 PM	IC2_080808A
	W-MW-12	Aqueous	E300	Anions by IC method - Water	R39093	500	08/11/08 02:12 PM	IC2_080811A
0808056-08C	W-MW-12	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:31 PM	TITRATOR_080807C
0808056-08D	W-MW-12	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	5	08/08/08 10:40 AM	WC_080808A
	W-MW-12	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-09A	W-MW-06	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 10:02 PM	ICP-MS3_080811A
	W-MW-06	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	100	08/12/08 12:32 PM	ICP-MS3_080812A
0808056-09B	W-MW-06	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 11:04 AM	TITRATOR_080808A
	W-MW-06	Aqueous	E300	Anions by IC method - Water	R39093	100	08/11/08 02:27 PM	IC2_080811A
	W-MW-06	Aqueous	E300	Anions by IC method - Water	R39093	200	08/11/08 03:02 PM	IC2_080811A
	W-MW-06	Aqueous	E300	Anions by IC method - Water	R39093	1	08/11/08 04:31 PM	IC2_080811A
0808056-09C	W-MW-06	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:32 PM	TITRATOR_080807C
0808056-09D	W-MW-06	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	5	08/08/08 10:40 AM	WC_080808A
	W-MW-06	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-10A	W-MW-18	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 10:07 PM	ICP-MS3_080811A
	W-MW-18	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	2000	08/12/08 12:26 PM	ICP-MS3_080812A
0808056-10B	W-MW-18	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 11:15 AM	TITRATOR_080808A
	W-MW-18	Aqueous	E300	Anions by IC method - Water	R39093	1000	08/11/08 03:32 PM	IC2_080811A
	W-MW-18	Aqueous	E300	Anions by IC method - Water	R39093	5	08/11/08 05:15 PM	IC2_080811A

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
	W-MW-18	Aqueous	E300	Anions by IC method - Water	R39093	100	08/11/08 06:13 PM	IC2_080811A
0808056-10C	W-MW-18	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:36 PM	TITRATOR_080807C
0808056-10D	W-MW-18	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	25	08/08/08 10:40 AM	WC_080808A
	W-MW-18	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-11A	W-OW-01	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 10:12 PM	ICP-MS3_080811A
	W-OW-01	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	100	08/12/08 12:37 PM	ICP-MS3_080812A
0808056-11B	W-OW-01	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 11:30 AM	TITRATOR_080808A
	W-OW-01	Aqueous	E300	Anions by IC method - Water	R39093	1000	08/11/08 03:47 PM	IC2_080811A
	W-OW-01	Aqueous	E300	Anions by IC method - Water	R39093	100	08/11/08 06:28 PM	IC2_080811A
	W-OW-01	Aqueous	E300	Anions by IC method - Water	R39093	5	08/11/08 06:57 PM	IC2_080811A
0808056-11C	W-OW-01	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:37 PM	TITRATOR_080807C
0808056-11D	W-OW-01	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	25	08/08/08 10:40 AM	WC_080808A
	W-OW-01	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-12A	W-OW-01-D	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 10:17 PM	ICP-MS3_080811A
	W-OW-01-D	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	100	08/12/08 12:42 PM	ICP-MS3_080812A
0808056-12B	W-OW-01-D	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 11:42 AM	TITRATOR_080808A
	W-OW-01-D	Aqueous	E300	Anions by IC method - Water	R39093	1000	08/11/08 04:01 PM	IC2_080811A
	W-OW-01-D	Aqueous	E300	Anions by IC method - Water	R39093	100	08/11/08 06:43 PM	IC2_080811A
	W-OW-01-D	Aqueous	E300	Anions by IC method - Water	R39093	5	08/11/08 07:12 PM	IC2_080811A
0808056-12C	W-OW-01-D	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:39 PM	TITRATOR_080807C
0808056-12D	W-OW-01-D	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	25	08/08/08 10:40 AM	WC_080808A
	W-OW-01-D	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B
0808056-13A	W-MW-19	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/11/08 10:23 PM	ICP-MS3_080811A
	W-MW-19	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	100	08/12/08 12:47 PM	ICP-MS3_080812A
	W-MW-19	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31267	1000	08/12/08 03:38 PM	ICP-MS3_080812A
0808056-13B	W-MW-19	Aqueous	M2320 B	Alkalinity	R39081	1	08/08/08 12:03 PM	TITRATOR_080808A
	W-MW-19	Aqueous	E300	Anions by IC method - Water	R39093	200	08/11/08 04:16 PM	IC2_080811A
	W-MW-19	Aqueous	E300	Anions by IC method - Water	R39093	500	08/11/08 05:59 PM	IC2_080811A
	W-MW-19	Aqueous	E300	Anions by IC method - Water	R39093	1	08/11/08 07:27 PM	IC2_080811A

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808056

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
0808056-13C	W-MW-19	Aqueous	M4500-H+ B	pH	R39062	1	08/07/08 03:40 PM	TITRATOR_080807C
0808056-13D	W-MW-19	Aqueous	M2510 B	Specific Conductance	CONDW-8/8/08	5	08/08/08 10:40 AM	WC_080808A
	W-MW-19	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/8/08	1	08/08/08 02:30 PM	WC_080808B

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-14
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-01
Project No:	161638	Collection Date:	08/06/08 10:30 AM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	532	100	100		mg/L	1000	08/11/08 08:54 PM
Magnesium	277	5.00	5.00		mg/L	50	08/12/08 02:09 PM
Potassium	82.0	5.00	5.00		mg/L	50	08/12/08 02:09 PM
Sodium	5100	100	100		mg/L	1000	08/11/08 08:54 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	ND	30.0	100		mg/L	100	08/08/08 11:15 AM
Chloride	5870	60.0	200		mg/L	200	08/08/08 01:59 PM
Sulfate	6760	100	300		mg/L	100	08/08/08 11:15 AM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	424	10.0	20.0		mg/L	1	08/08/08 09:30 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 09:30 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 09:30 AM
Alkalinity, Total (As CaCO3)	424	10.0	20.0		mg/L	1	08/08/08 09:30 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.77	0	0		pH Units	1	08/07/08 03:23 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	30800	50.0	50.0		µmhos/cm	5	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	20800	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-WW-4313302
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-02
Project No:	161638	Collection Date:	08/06/08 11:20 AM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	101	2.00	2.00		mg/L	20	08/12/08 02:14 PM
Magnesium	97.5	2.00	2.00		mg/L	20	08/12/08 02:14 PM
Potassium	7.95	2.00	2.00		mg/L	20	08/12/08 02:14 PM
Sodium	111	2.00	2.00		mg/L	20	08/12/08 02:14 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	0.703	0.300	1.00	J	mg/L	1	08/08/08 11:29 AM
Chloride	85.0	3.00	10.0		mg/L	10	08/08/08 11:44 AM
Sulfate	900	10.0	30.0		mg/L	10	08/08/08 11:44 AM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	51.6	10.0	20.0		mg/L	1	08/08/08 01:45 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:45 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:45 PM
Alkalinity, Total (As CaCO3)	51.6	10.0	20.0		mg/L	1	08/08/08 01:45 PM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.98	0	0		pH Units	1	08/07/08 03:24 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	1590	10.0	10.0		µmhos/cm	1	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	1210	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-WW-081
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-03
Project No:	161638	Collection Date:	08/06/08 12:10 PM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	1140	100	100		mg/L	1000	08/11/08 08:28 PM
Magnesium	575	100	100		mg/L	1000	08/11/08 08:28 PM
Potassium	125	100	100		mg/L	1000	08/11/08 08:28 PM
Sodium	9160	100	100		mg/L	1000	08/11/08 08:28 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	34.7	3.00	10.0		mg/L	10	08/08/08 02:14 PM
Chloride	19200	150	500		mg/L	500	08/11/08 10:18 AM
Sulfate	3480	100	300		mg/L	100	08/08/08 12:31 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	237	10.0	20.0		mg/L	1	08/08/08 09:45 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 09:45 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 09:45 AM
Alkalinity, Total (As CaCO3)	237	10.0	20.0		mg/L	1	08/08/08 09:45 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.60	0	0		pH Units	1	08/07/08 03:25 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	59400	50.0	50.0		µmhos/cm	5	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	36700	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/13/08

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-20
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-04
Project No:	161638	Collection Date:	08/06/08 01:15 PM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	342	10.0	10.0		mg/L	100	08/12/08 12:52 PM
Magnesium	165	10.0	10.0		mg/L	100	08/12/08 12:52 PM
Potassium	21.2	1.00	1.00		mg/L	10	08/12/08 02:20 PM
Sodium	675	10.0	10.0		mg/L	100	08/12/08 12:52 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	2.99	0.300	1.00		mg/L	1	08/08/08 12:13 PM
Chloride	945	30.0	100		mg/L	100	08/13/08 10:04 AM
Sulfate	1160	100	300		mg/L	100	08/13/08 10:04 AM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	322	10.0	20.0		mg/L	1	08/08/08 09:59 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 09:59 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 09:59 AM
Alkalinity, Total (As CaCO3)	322	10.0	20.0		mg/L	1	08/08/08 09:59 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.95	0	0		pH Units	1	08/07/08 03:27 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	5470	10.0	10.0		µmhos/cm	1	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	4120	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between MDL and RL
MDL	Method Detection Limit
N	Parameter not NELAC certified
ND	Not Detected at the Method Detection Limit
RL	Reporting Limit
S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-17
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-05
Project No:	161638	Collection Date:	08/06/08 02:10 PM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	414	10.0	10.0		mg/L	100	08/12/08 02:04 PM
Magnesium	187	10.0	10.0		mg/L	100	08/12/08 02:04 PM
Potassium	46.7	10.0	10.0		mg/L	100	08/12/08 02:04 PM
Sodium	2320	100	100		mg/L	1000	08/11/08 09:41 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	7.45	0.300	1.00		mg/L	1	08/08/08 02:58 PM
Chloride	3540	30.0	100		mg/L	100	08/13/08 10:18 AM
Sulfate	2230	100	300		mg/L	100	08/13/08 10:18 AM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	325	10.0	20.0		mg/L	1	08/08/08 10:08 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 10:08 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 10:08 AM
Alkalinity, Total (As CaCO3)	325	10.0	20.0		mg/L	1	08/08/08 10:08 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.87	0	0		pH Units	1	08/07/08 03:28 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	16300	50.0	50.0		µmhos/cm	5	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	10200	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-05
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-06
Project No:	161638	Collection Date:	08/05/08 05:06 PM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	885	10.0	10.0		mg/L	100	08/12/08 01:48 PM
Magnesium	325	10.0	10.0		mg/L	100	08/12/08 01:48 PM
Potassium	109	10.0	10.0		mg/L	100	08/12/08 01:48 PM
Sodium	7150	100	100		mg/L	1000	08/11/08 09:46 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	25.1	1.50	5.00		mg/L	5	08/08/08 03:12 PM
Chloride	13900	150	500		mg/L	500	08/11/08 11:16 AM
Sulfate	2740	50.0	150		mg/L	50	08/11/08 11:02 AM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	305	10.0	20.0		mg/L	1	08/08/08 10:28 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 10:28 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 10:28 AM
Alkalinity, Total (As CaCO3)	305	10.0	20.0		mg/L	1	08/08/08 10:28 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.69	0	0		pH Units	1	08/07/08 03:29 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	46700	50.0	50.0		µmhos/cm	5	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	27900	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/13/08

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-10
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-07
Project No:	161638	Collection Date:	08/05/08 05:25 PM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	751	10.0	10.0		mg/L	100	08/12/08 01:54 PM
Magnesium	339	10.0	10.0		mg/L	100	08/12/08 01:54 PM
Potassium	138	10.0	10.0		mg/L	100	08/12/08 01:54 PM
Sodium	8850	100	100		mg/L	1000	08/11/08 09:51 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	26.2	1.50	5.00		mg/L	5	08/08/08 03:27 PM
Chloride	13600	150	500		mg/L	500	08/11/08 11:46 AM
Sulfate	6150	50.0	150		mg/L	50	08/11/08 11:31 AM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	408	10.0	20.0		mg/L	1	08/08/08 10:42 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 10:42 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 10:42 AM
Alkalinity, Total (As CaCO3)	408	10.0	20.0		mg/L	1	08/08/08 10:42 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.73	0	0		pH Units	1	08/07/08 03:30 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	51200	50.0	50.0		µmhos/cm	5	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	32200	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-12
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-08
Project No:	161638	Collection Date:	08/05/08 06:08 PM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	1020	100	100		mg/L	1000	08/11/08 09:57 PM
Magnesium	634	10.0	10.0		mg/L	100	08/12/08 01:59 PM
Potassium	128	10.0	10.0		mg/L	100	08/12/08 01:59 PM
Sodium	9190	100	100		mg/L	1000	08/11/08 09:57 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	31.7	1.50	5.00		mg/L	5	08/08/08 03:42 PM
Chloride	17500	150	500		mg/L	500	08/11/08 02:12 PM
Sulfate	4610	500	1500		mg/L	500	08/11/08 02:12 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	354	10.0	20.0		mg/L	1	08/08/08 01:57 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:57 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 01:57 PM
Alkalinity, Total (As CaCO3)	354	10.0	20.0		mg/L	1	08/08/08 01:57 PM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.71	0	0		pH Units	1	08/07/08 03:31 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	58400	50.0	50.0		µmhos/cm	5	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	37400	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-06
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-09
Project No:	161638	Collection Date:	08/06/08 11:30 AM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	376	10.0	10.0		mg/L	100	08/12/08 12:32 PM
Magnesium	286	10.0	10.0		mg/L	100	08/12/08 12:32 PM
Potassium	55.0	10.0	10.0		mg/L	100	08/12/08 12:32 PM
Sodium	2800	100	100		mg/L	1000	08/11/08 10:02 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	9.89	0.300	1.00		mg/L	1	08/11/08 04:31 PM
Chloride	5750	60.0	200		mg/L	200	08/11/08 03:02 PM
Sulfate	1040	100	300		mg/L	100	08/11/08 02:27 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	329	10.0	20.0		mg/L	1	08/08/08 11:04 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 11:04 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 11:04 AM
Alkalinity, Total (As CaCO3)	329	10.0	20.0		mg/L	1	08/08/08 11:04 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.87	0	0		pH Units	1	08/07/08 03:32 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	20200	50.0	50.0		µmhos/cm	5	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	11800	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-18
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-10
Project No:	161638	Collection Date:	08/06/08 01:10 PM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	1390	100	100		mg/L	1000	08/11/08 10:07 PM
Magnesium	603	100	100		mg/L	1000	08/11/08 10:07 PM
Potassium	175	100	100		mg/L	1000	08/11/08 10:07 PM
Sodium	13700	200	200		mg/L	2000	08/12/08 12:26 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	44.2	1.50	5.00		mg/L	5	08/11/08 05:15 PM
Chloride	25600	300	1000		mg/L	1000	08/11/08 03:32 PM
Sulfate	4180	100	300		mg/L	100	08/11/08 06:13 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	286	10.0	20.0		mg/L	1	08/08/08 11:15 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 11:15 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 11:15 AM
Alkalinity, Total (As CaCO3)	286	10.0	20.0		mg/L	1	08/08/08 11:15 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.48	0	0		pH Units	1	08/07/08 03:36 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	89200	250	250		µmhos/cm	25	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	49300	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-OW-01
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-11
Project No:	161638	Collection Date:	08/06/08 03:45 PM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	4090	100	100		mg/L	1000	08/11/08 10:12 PM
Magnesium	1080	100	100		mg/L	1000	08/11/08 10:12 PM
Potassium	61.7	10.0	10.0		mg/L	100	08/12/08 12:37 PM
Sodium	9430	100	100		mg/L	1000	08/11/08 10:12 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	163	1.50	5.00		mg/L	5	08/11/08 06:57 PM
Chloride	28900	300	1000		mg/L	1000	08/11/08 03:47 PM
Sulfate	1420	100	300		mg/L	100	08/11/08 06:28 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	288	10.0	20.0		mg/L	1	08/08/08 11:30 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 11:30 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 11:30 AM
Alkalinity, Total (As CaCO3)	288	10.0	20.0		mg/L	1	08/08/08 11:30 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.14	0	0		pH Units	1	08/07/08 03:37 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	89500	250	250		µmhos/cm	25	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	53900	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-OW-01-D
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-12
Project No:	161638	Collection Date:	08/06/08 03:45 PM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	4090	100	100		mg/L	1000	08/11/08 10:17 PM
Magnesium	1100	100	100		mg/L	1000	08/11/08 10:17 PM
Potassium	61.6	10.0	10.0		mg/L	100	08/12/08 12:42 PM
Sodium	9540	100	100		mg/L	1000	08/11/08 10:17 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	164	1.50	5.00		mg/L	5	08/11/08 07:12 PM
Chloride	28400	300	1000		mg/L	1000	08/11/08 04:01 PM
Sulfate	1490	100	300		mg/L	100	08/11/08 06:43 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	286	10.0	20.0		mg/L	1	08/08/08 11:42 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 11:42 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 11:42 AM
Alkalinity, Total (As CaCO3)	286	10.0	20.0		mg/L	1	08/08/08 11:42 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.13	0	0		pH Units	1	08/07/08 03:39 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	85500	250	250		µmhos/cm	25	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	54400	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-19
Project:	RRC -Wendkirk BMP	Lab ID:	0808056-13
Project No:	161638	Collection Date:	08/06/08 04:52 PM
Lab Order:	0808056	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	971	100	100		mg/L	1000	08/12/08 03:38 PM
Magnesium	360	10.0	10.0		mg/L	100	08/12/08 12:47 PM
Potassium	98.7	10.0	10.0		mg/L	100	08/12/08 12:47 PM
Sodium	6930	100	100		mg/L	1000	08/12/08 03:38 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	18.7	0.300	1.00		mg/L	1	08/11/08 07:27 PM
Chloride	12600	150	500		mg/L	500	08/11/08 05:59 PM
Sulfate	3950	200	600		mg/L	200	08/11/08 04:16 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	301	10.0	20.0		mg/L	1	08/08/08 12:03 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 12:03 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/08/08 12:03 PM
Alkalinity, Total (As CaCO3)	301	10.0	20.0		mg/L	1	08/08/08 12:03 PM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.74	0	0		pH Units	1	08/07/08 03:40 PM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	35800	50.0	50.0		µmhos/cm	5	08/08/08 10:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	22100	10.0	10.0		mg/L	1	08/08/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080811A

Sample ID:	0808056-03A PDS	Batch ID:	31267	TestNo:	SW6020	Units:	mg/L
SampType:	PDS	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 08:38 PM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	5770	100	5000	1140	92.7	75	125			
Magnesium	5230	100	5000	575	93.1	75	125			
Potassium	4970	100	5000	125	97.0	75	125			
Sodium	14100	100	5000	9160	98.2	75	125			

Sample ID:	0808056-03A MS	Batch ID:	31267	TestNo:	SW6020	Units:	mg/L
SampType:	MS	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 08:44 PM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	1140	100	5.00	1140	-40.0	80	120			S
Magnesium	575	100	5.00	575	6.00	80	120			S
Potassium	129	100	5.00	125	84.0	80	120			
Sodium	9090	100	5.00	9160	-1460	80	120			S

Sample ID:	0808056-03A MSD	Batch ID:	31267	TestNo:	SW6020	Units:	mg/L
SampType:	MSD	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 08:49 PM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	1120	100	5.00	1140	-440	80	120	1.78	15	S
Magnesium	573	100	5.00	575	-34.0	80	120	0.348	15	S
Potassium	121	100	5.00	125	-72.0	80	120	6.23	15	S
Sodium	9120	100	5.00	9160	-800	80	120	0.362	15	S

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080811A

Sample ID:	ICV1-080811	Batch ID:	R39104	TestNo:	SW6020	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 01:19 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	2.41	0.100	2.50	0	96.4	90	110			
Magnesium	2.43	0.100	2.50	0	97.0	90	110			
Potassium	2.44	0.100	2.50	0	97.5	90	110			
Sodium	2.42	0.100	2.50	0	96.8	90	110			

Sample ID:	CCV5-080811	Batch ID:	R39104	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 07:36 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.86	0.100	5.00	0	97.3	90	110			
Magnesium	4.89	0.100	5.00	0	97.8	90	110			
Potassium	5.04	0.100	5.00	0	101	90	110			
Sodium	4.66	0.100	5.00	0	93.3	90	110			

Sample ID:	CCV6-080811	Batch ID:	R39104	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 09:04 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.87	0.100	5.00	0	97.3	90	110			
Magnesium	4.91	0.100	5.00	0	98.2	90	110			
Potassium	5.04	0.100	5.00	0	101	90	110			
Sodium	4.70	0.100	5.00	0	94.0	90	110			

Sample ID:	CCV7-080811	Batch ID:	R39104	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 10:28 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.85	0.100	5.00	0	96.9	90	110			
Magnesium	4.89	0.100	5.00	0	97.9	90	110			
Potassium	5.04	0.100	5.00	0	101	90	110			
Sodium	4.74	0.100	5.00	0	94.7	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080812A

Sample ID:	MB-31267	Batch ID:	31267		TestNo:	SW6020		Units:	mg/L
SampType:	MBLK	Run ID:	ICP-MS3_080812A		Analysis Date:	08/12/08 11:49 AM		Prep Date:	08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		ND	0.100								
Magnesium		ND	0.100								
Potassium		ND	0.100								
Sodium		ND	0.100								

Sample ID:	0808056-03A SD	Batch ID:	31267		TestNo:	SW6020		Units:	mg/L
SampType:	SD	Run ID:	ICP-MS3_080812A		Analysis Date:	08/12/08 12:11 PM		Prep Date:	08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		1160	500	0	1150				1.30	10	
Magnesium		598	500	0	577				3.51	10	
Potassium		0	500	0	128				0	10	
Sodium		9620	500	0	9420				2.06	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080812A

Sample ID:	ICV1-080812	Batch ID:	R39126	TestNo:	SW6020	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS3_080812A	Analysis Date:	08/12/08 11:28 AM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	2.44	0.100	2.50	0	97.5	90	110			
Magnesium	2.42	0.100	2.50	0	96.9	90	110			
Potassium	2.47	0.100	2.50	0	98.8	90	110			
Sodium	2.44	0.100	2.50	0	97.5	90	110			

Sample ID:	CCV1-080812	Batch ID:	R39126	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080812A	Analysis Date:	08/12/08 12:58 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.82	0.100	5.00	0	96.4	90	110			
Magnesium	4.87	0.100	5.00	0	97.5	90	110			
Potassium	5.03	0.100	5.00	0	101	90	110			
Sodium	4.83	0.100	5.00	0	96.7	90	110			

Sample ID:	CCV2-080812	Batch ID:	R39126	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080812A	Analysis Date:	08/12/08 02:25 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.83	0.100	5.00	0	96.6	90	110			
Magnesium	4.81	0.100	5.00	0	96.3	90	110			
Potassium	5.04	0.100	5.00	0	101	90	110			
Sodium	4.84	0.100	5.00	0	96.8	90	110			

Sample ID:	CCV3-080812	Batch ID:	R39126	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080812A	Analysis Date:	08/12/08 03:53 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.80	0.100	5.00	0	95.9	90	110			
Sodium	4.67	0.100	5.00	0	93.4	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_080808A

Sample ID:	ICV-080808	Batch ID:	R39086		TestNo:		E300		Units:		mg/L
SampType:	ICV	Run ID:	IC2_080808A		Analysis Date:		08/08/08 09:17 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		51.1	1.00	50.00	0	102	90	110			
Chloride		25.7	1.00	25.00	0	103	90	110			
Sulfate		77.3	3.00	75.00	0	103	90	110			

Sample ID:	MB-080808	Batch ID:	R39086		TestNo:		E300		Units:		mg/L
SampType:	MBLK	Run ID:	IC2_080808A		Analysis Date:		08/08/08 09:38 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		ND	1.00								
Chloride		ND	1.00								
Sulfate		ND	3.00								

Sample ID:	LCS-080808	Batch ID:	R39086		TestNo:		E300		Units:		mg/L
SampType:	LCS	Run ID:	IC2_080808A		Analysis Date:		08/08/08 09:53 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.8	1.00	20.00	0	99.2	90	110			
Chloride		9.77	1.00	10.00	0	97.7	90	110			
Sulfate		29.0	3.00	30.00	0	96.8	90	110			

Sample ID:	LCSD-080808	Batch ID:	R39086		TestNo:		E300		Units:		mg/L
SampType:	LCSD	Run ID:	IC2_080808A		Analysis Date:		08/08/08 10:08 AM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		20.0	1.00	20.00	0	100	90	110	0.948	20	
Chloride		9.83	1.00	10.00	0	98.3	90	110	0.610	20	
Sulfate		29.7	3.00	30.00	0	99.0	90	110	2.24	20	

Sample ID:	0808056-02B MS	Batch ID:	R39086		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC2_080808A		Analysis Date:		08/08/08 12:46 PM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		16.3	1.00	20.00	0.4218	79.5	90	110			S

Sample ID:	0808056-02B MSD	Batch ID:	R39086		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC2_080808A		Analysis Date:		08/08/08 01:00 PM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		16.5	1.00	20.00	0.4218	80.3	90	110	0.941	20	S

Sample ID:	CCV1-080808	Batch ID:	R39086		TestNo:		E300		Units:		mg/L
SampType:	CCV	Run ID:	IC2_080808A		Analysis Date:		08/08/08 01:15 PM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.8	1.00	20.00	0	98.9	90	110			
Chloride		10.3	1.00	10.00	0	103	90	110			
Sulfate		30.5	3.00	30.00	0	102	90	110			

Sample ID:	0808056-02B MS	Batch ID:	R39086		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC2_080808A		Analysis Date:		08/08/08 01:30 PM		Prep Date:		08/08/08

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_080808A

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	155	10.0	100.0	51.02	104	90	110			
Sulfate	862	30.0	300.0	540.0	107	90	110			

Sample ID:	0808056-02B MSD	Batch ID:	R39086	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC2_080808A	Analysis Date:	08/08/08 01:44 PM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	153	10.0	100.0	51.02	102	90	110	1.11	20	
Sulfate	860	30.0	300.0	540.0	107	90	110	0.325	20	

Sample ID:	CCV2-080808	Batch ID:	R39086	TestNo:	E300	Units:	mg/L
SampType:	CCV	Run ID:	IC2_080808A	Analysis Date:	08/08/08 03:56 PM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide	19.9	1.00	20.00	0	99.4	90	110			
Chloride	9.99	1.00	10.00	0	99.9	90	110			
Sulfate	30.7	3.00	30.00	0	102	90	110			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_080811A

Sample ID:	ICV-080811	Batch ID:	R39093	TestNo:	E300	Units:	mg/L				
SampType:	ICV	Run ID:	IC2_080811A	Analysis Date:	08/11/08 09:12 AM	Prep Date:	08/11/08				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		51.3	1.00	50.00	0	103	90	110			
Chloride		26.3	1.00	25.00	0	105	90	110			
Sulfate		77.4	3.00	75.00	0	103	90	110			

Sample ID:	MB-080811	Batch ID:	R39093	TestNo:	E300	Units:	mg/L				
SampType:	MBLK	Run ID:	IC2_080811A	Analysis Date:	08/11/08 09:34 AM	Prep Date:	08/11/08				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		ND	1.00								
Chloride		ND	1.00								
Sulfate		ND	3.00								

Sample ID:	LCS-080811	Batch ID:	R39093	TestNo:	E300	Units:	mg/L				
SampType:	LCS	Run ID:	IC2_080811A	Analysis Date:	08/11/08 09:48 AM	Prep Date:	08/11/08				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.9	1.00	20.00	0	99.5	90	110			
Chloride		9.86	1.00	10.00	0	98.6	90	110			
Sulfate		29.8	3.00	30.00	0	99.3	90	110			

Sample ID:	LCSD-080811	Batch ID:	R39093	TestNo:	E300	Units:	mg/L				
SampType:	LCSD	Run ID:	IC2_080811A	Analysis Date:	08/11/08 10:03 AM	Prep Date:	08/11/08				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.8	1.00	20.00	0	99.2	90	110	0.348	20	
Chloride		9.75	1.00	10.00	0	97.5	90	110	1.14	20	
Sulfate		29.6	3.00	30.00	0	98.7	90	110	0.602	20	

Sample ID:	CCV1-080811	Batch ID:	R39093	TestNo:	E300	Units:	mg/L				
SampType:	CCV	Run ID:	IC2_080811A	Analysis Date:	08/11/08 12:00 PM	Prep Date:	08/11/08				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.8	1.00	20.00	0	99.0	90	110			
Chloride		9.79	1.00	10.00	0	97.9	90	110			
Sulfate		29.6	3.00	30.00	0	98.7	90	110			

Sample ID:	0808040-03B MS	Batch ID:	R39093	TestNo:	E300	Units:	mg/L				
SampType:	MS	Run ID:	IC2_080811A	Analysis Date:	08/11/08 01:14 PM	Prep Date:	08/11/08				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		16700	500	5000	11340	107	90	110			

Sample ID:	0808040-03B MSD	Batch ID:	R39093	TestNo:	E300	Units:	mg/L				
SampType:	MSD	Run ID:	IC2_080811A	Analysis Date:	08/11/08 01:28 PM	Prep Date:	08/11/08				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		16700	500	5000	11340	106	90	110	0.285	20	

Sample ID:	0808040-03B MS	Batch ID:	R39093	TestNo:	E300	Units:	mg/L				
SampType:	MS	Run ID:	IC2_080811A	Analysis Date:	08/11/08 01:43 PM	Prep Date:	08/11/08				

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_080811A

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate	1700	60.0	600.0	1065	106	90	110			

Sample ID:	0808040-03B MSD	Batch ID:	R39093	TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC2_080811A	Analysis Date:		08/11/08 01:58 PM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		1700	60.0	600.0	1065	106	90	110	0.131	20	

Sample ID:	CCV2-080811	Batch ID:	R39093	TestNo:		E300		Units:		mg/L
SampType:	CCV	Run ID:	IC2_080811A	Analysis Date:		08/11/08 02:42 PM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.8	1.00	20.00	0	98.9	90	110			
Chloride		9.83	1.00	10.00	0	98.3	90	110			
Sulfate		29.5	3.00	30.00	0	98.3	90	110			

Sample ID:	0808056-09B MS	Batch ID:	R39093	TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC2_080811A	Analysis Date:		08/11/08 04:45 PM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		25.8	1.00	20.00	5.930	99.4	90	110			

Sample ID:	0808056-09B MSD	Batch ID:	R39093	TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC2_080811A	Analysis Date:		08/11/08 05:00 PM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		25.9	1.00	20.00	5.930	100	90	110	0.441	20	

Sample ID:	CCV3-080811	Batch ID:	R39093	TestNo:		E300		Units:		mg/L
SampType:	CCV	Run ID:	IC2_080811A	Analysis Date:		08/11/08 05:44 PM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.7	1.00	20.00	0	98.4	90	110			
Chloride		9.87	1.00	10.00	0	98.7	90	110			
Sulfate		29.9	3.00	30.00	0	99.7	90	110			

Sample ID:	CCV4-080811	Batch ID:	R39093	TestNo:		E300		Units:		mg/L
SampType:	CCV	Run ID:	IC2_080811A	Analysis Date:		08/11/08 08:11 PM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.7	1.00	20.00	0	98.3	90	110			
Chloride		10.6	1.00	10.00	0	106	90	110			
Sulfate		30.0	3.00	30.00	0	99.8	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_080813A

Sample ID:	ICV-080813	Batch ID:	R39137		TestNo:		E300		Units:		mg/L
SampType:	ICV	Run ID:	IC2_080813A		Analysis Date:		08/13/08 09:18 AM		Prep Date:		08/13/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		25.9	1.00	25.00	0	104	90	110			
Sulfate		77.4	3.00	75.00	0	103	90	110			

Sample ID:	MB-080813	Batch ID:	R39137		TestNo:		E300		Units:		mg/L
SampType:	MBLK	Run ID:	IC2_080813A		Analysis Date:		08/13/08 09:48 AM		Prep Date:		08/13/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		ND	1.00								
Sulfate		ND	3.00								

Sample ID:	CCV1-080813	Batch ID:	R39137		TestNo:		E300		Units:		mg/L
SampType:	CCV	Run ID:	IC2_080813A		Analysis Date:		08/13/08 10:34 AM		Prep Date:		08/13/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		9.83	1.00	10.00	0	98.3	90	110			
Sulfate		29.7	3.00	30.00	0	98.9	90	110			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080807C

Sample ID:	ICV-080807	Batch ID:	R39062	TestNo:	M4500-H+ B	Units:	pH Units
SampType:	ICV	Run ID:	TITRATOR_080807C	Analysis Date:	08/07/08 03:12 PM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH	9.98	0	10.00	0	99.8	99	101			

Sample ID:	0808056-09C DUP	Batch ID:	R39062	TestNo:	M4500-H+ B	Units:	pH Units
SampType:	DUP	Run ID:	TITRATOR_080807C	Analysis Date:	08/07/08 03:34 PM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH	6.82	0	0	6.870				0.730	5	

Sample ID:	CCV1-080807	Batch ID:	R39062	TestNo:	M4500-H+ B	Units:	pH Units
SampType:	CCV	Run ID:	TITRATOR_080807C	Analysis Date:	08/07/08 03:35 PM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH	7.02	0	7.000	0	100	97.1	102.9			

Sample ID:	0808056-13C DUP	Batch ID:	R39062	TestNo:	M4500-H+ B	Units:	pH Units
SampType:	DUP	Run ID:	TITRATOR_080807C	Analysis Date:	08/07/08 03:41 PM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH	6.76	0	0	6.740				0.296	5	

Sample ID:	CCV2-080807	Batch ID:	R39062	TestNo:	M4500-H+ B	Units:	pH Units
SampType:	CCV	Run ID:	TITRATOR_080807C	Analysis Date:	08/07/08 03:50 PM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH	7.03	0	7.000	0	100	97.1	102.9			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080808A

Sample ID:	ICV-080808	Batch ID:	R39081	TestNo:	M2320 B	Units:	mg/L
SampType:	ICV	Run ID:	TITRATOR_080808A	Analysis Date:	08/08/08 08:31 AM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	15.9	20.0	0							
Alkalinity, Carbonate (As CaCO3)	85.3	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	101	20.0	100.0	0	101	98	102			

Sample ID:	MB-080808	Batch ID:	R39081	TestNo:	M2320 B	Units:	mg/L
SampType:	MBLK	Run ID:	TITRATOR_080808A	Analysis Date:	08/08/08 08:33 AM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID:	LCS-080808	Batch ID:	R39081	TestNo:	M2320 B	Units:	mg/L
SampType:	LCS	Run ID:	TITRATOR_080808A	Analysis Date:	08/08/08 08:37 AM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	0	20.0	0							
Alkalinity, Carbonate (As CaCO3)	44.2	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	51.2	20.0	50.00	0	102	74	129			

Sample ID:	CCV1-080808	Batch ID:	R39081	TestNo:	M2320 B	Units:	mg/L
SampType:	CCV	Run ID:	TITRATOR_080808A	Analysis Date:	08/08/08 09:50 AM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	23.6	20.0	0							
Alkalinity, Carbonate (As CaCO3)	77.3	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	101	20.0	100.0	0	101	90	110			

Sample ID:	0808056-05B DUP	Batch ID:	R39081	TestNo:	M2320 B	Units:	mg/L
SampType:	DUP	Run ID:	TITRATOR_080808A	Analysis Date:	08/08/08 10:18 AM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	324	20.0	0	325.0				0.370	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	324	20.0	0	325.0				0.370	20	

Sample ID:	CCV2-080808	Batch ID:	R39081	TestNo:	M2320 B	Units:	mg/L
SampType:	CCV	Run ID:	TITRATOR_080808A	Analysis Date:	08/08/08 11:54 AM	Prep Date:	08/08/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	16.1	20.0	0							
Alkalinity, Carbonate (As CaCO3)	85.8	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	102	20.0	100.0	0	102	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080808A

Sample ID:	0808056-13B DUP	Batch ID:	R39081		TestNo:		M2320 B		Units:		mg/L
SampType:	DUP	Run ID:	TITRATOR_080808A		Analysis Date:		08/08/08 12:13 PM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)		299	20.0	0	300.8				0.640	20	
Alkalinity, Carbonate (As CaCO3)		0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)		299	20.0	0	300.8				0.640	20	

Sample ID:	CCV3-080808	Batch ID:	R39081		TestNo:		M2320 B		Units:		mg/L
SampType:	CCV	Run ID:	TITRATOR_080808A		Analysis Date:		08/08/08 02:32 PM		Prep Date:		08/08/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)		21.4	20.0	0							
Alkalinity, Carbonate (As CaCO3)		80.0	20.0	0							
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0							
Alkalinity, Total (As CaCO3)		101	20.0	100.0	0	101	90	110			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080808A

Sample ID:	ICV-080808	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	ICV	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		12900	10.0	12880	0	100	95	105			

Sample ID:	MBLK-080808	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	MBLK	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		ND	10.0								

Sample ID:	LCS-080808	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	LCS	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		1370	10.0	1413	0	96.7	95	105			

Sample ID:	CCV1-080808	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	CCV	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		12800	10.0	12880	0	99.5	95	105			

Sample ID:	0808056-03D DUP	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	DUP	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		60800	50.0	0	59450				2.16	2	

Sample ID:	CCV2-080808	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	CCV	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		12600	10.0	12880	0	97.5	95	105			

Sample ID:	0808056-13D DUP	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	DUP	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		35000	50.0	0	35800				2.26	2	

Sample ID:	CCV3-080808	Batch ID:	CONDW-8/8/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	CCV	Run ID:	WC_080808A	Analysis Date:	08/08/08 10:40 AM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		12600	10.0	12880	0	98.2	95	105			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808056
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080808B

Sample ID:	MB-080808	Batch ID:	TDS_W-8/8/08	TestNo:	M2540C			Units:	mg/L		
SampType:	MBLK	Run ID:	WC_080808B	Analysis Date:	08/08/08 02:30 PM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		ND	10.0								

Sample ID:	LCS-080808	Batch ID:	TDS_W-8/8/08	TestNo:	M2540C			Units:	mg/L		
SampType:	LCS	Run ID:	WC_080808B	Analysis Date:	08/08/08 02:30 PM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		742	10.0	745.6	0	99.5	90	113			

Sample ID:	0808056-05D DUP	Batch ID:	TDS_W-8/8/08	TestNo:	M2540C			Units:	mg/L		
SampType:	DUP	Run ID:	WC_080808B	Analysis Date:	08/08/08 02:30 PM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		9700	10.0	0	10180				4.78	5	

Sample ID:	0808056-13D DUP	Batch ID:	TDS_W-8/8/08	TestNo:	M2540C			Units:	mg/L		
SampType:	DUP	Run ID:	WC_080808B	Analysis Date:	08/08/08 02:30 PM			Prep Date:	08/08/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		21300	10.0	0	22060				3.32	5	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

August 13, 2008

Arsin Sahba
TRC Environmental Corp.
505 East Huntland Drive Suite 250
Austin, Texas 78752

TEL: (512) 329-6080
FAX: (512) 329-8750

Order No: 0808039

RE: RRC -Wendkirk BMP

Dear Arsin Sahba:

DHL Analytical received 13 sample(s) on 8/6/2008 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
Lab Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-08A-TX

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DHL ANALYTICAL

2300 Double Creek Drive • Round Rock, TX 78664
Phone (512) 388-8222 • FAX (512) 388-8229

№ 37510

CHAIN-OF-CUSTODY

CLIENT: TRC
ADDRESS: 505 E. HUNTLAND DR
PHONE: (512) 329-6080 FAX 329-8750
DATA REPORTED TO: scmiller@trcsolutions.com, asaliba@trcsolutions.com
ADDITIONAL REPORT COPIES TO: cmangum@trcsolutions.com

DATE: 8/5/08 PAGE 1 OF 2
PO #: 161638.0000.0000.00000 DHL WORK ORDER #: 0808039
PROJECT LOCATION OR NAME: WEINHEIMER BMP
CLIENT PROJECT #: 161638 COLLECTOR: C. MANGUM

Authorize 5% surcharge for TRRP report? ☐ Yes ☒ No

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ | TRPH 418.1 ☐ | GASOLINE MOD 8015 ☐ TPH 1005 ☐ TPH 1006 ☐ | DIESEL - MOD 8015 ☐ | CONDUCTIVITY | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ TOX ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | TDS ☐ pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐ | ANIONS (Chloride, Sulfate, Bromide) CATIONS (Ca, Na, Mg, K) Alkalinity (Bicarbonate, Carbonate)

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX	TRPH 418.1	GASOLINE MOD 8015	DIESEL - MOD 8015	CONDUCTIVITY	SVOC 8270	8081 PESTICIDES	8082 PCBS	TCLP - METALS (RCRA)	TCLP - PEST	TOTAL METALS (RCRA)	LEAD - TOTAL	RCI	TDS	pH	EXPLOSIVES	CHLORIDE	ANIONS	CATIONS	Alkalinity	FIELD NOTES
W-MW-02	01	8/5/08	1015	W	500(1) 250(3)	4		X		X	X				X										X	X		X	X	X		
W-MW-03	02		1100	W		4		X		X	X				X										X	X		X	X	X		
W-MW-01	03		1145	W		4		X		X	X				X										X	X		X	X	X		
W-MW-15	04		1215	W		4		X		X	X				X										X	X		X	X	X		
W-MW-16	05		1335	W		4		X		X	X				X										X	X		X	X	X		
W-MW-04	06		1445	W		4		X		X	X				X										X	X		X	X	X		** NOTE **
W-MW-11	07	↓	1530	W	↓	4		X		X	X				X										X	X		X	X	X		IN ACCORDANCE
																																WITH TRRC/TRC
																																QAPP FOR
																																COLORADO RIVER
																																* * *
TOTAL																																

C. MANGUM

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)
Jed W
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)
Jed W 8/6/08 10:30
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☐ TAT
OTHER ☑ 3 day

LABORATORY USE ONLY:
RECEIVING TEMP: 2.7° THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # Fedex
☐ APC DELIVERY
☐ HAND DELIVERED

DHL ANALYTICAL

2300 Double Creek Drive • Round Rock, TX 78664
Phone (512) 388-8222 • FAX (512) 388-8229

№ 37501

CHAIN-OF-CUSTODY

CLIENT: TRC
ADDRESS: 505 E HuntHand Dr Ste 250 Austin TX 78752
PHONE: 512-329-6080 FAX
DATA REPORTED TO: Arsin Sahba
ADDITIONAL REPORT COPIES TO: —

DATE: 8/5/08 PAGE 2 OF 2
PO #: DHL WORK ORDER #: 0808039
PROJECT LOCATION OR NAME: RRC - WendKirk
CLIENT PROJECT #: 161638 COLLECTOR: BC/TK

Authorize 5% surcharge for TRRP report? ☐ Yes ☐ No

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO3	H2SO4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐	PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	ROI ☐ TOX ☐ FLASHPOINT ☐	TDS ☒ TSS ☐ % MOISTURE ☐	pH ☒ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☐ ANIONS ☐ ALKALINITY ☒	CATIONS (Ca, Na, Mg, K)	METALS (Cl, Sulfate, Bromide)	Conductivity	FIELD NOTES
W-MW-13	08	8/5/08	1035	W	250 250ml	4		X		X	X														X	X		X	X	X	X	Alkalinity =
W-MW-9	09 02	8/5/08	1130	W		4		X		X	X														X	X		X	X	X	X	Carb + Bicarbonate
W-MW-Milford-2	10 03	8/5/08	1309	W		4		X		X	X														X	X		X	X	X	X	
W-MW-8	11 04	8/5/08	1420	W		4		X		X	X														X	X		X	X	X	X	
W-MW-8D	12 05	8/5/08	1420	W		4		X		X	X														X	X		X	X	X	X	
W-MW-7	13 06	8/5/08	1525	W	↓	4		X		X	X														X	X		X	X	X	X	

** In accordance with Colorado River RRC-TRC QAPP **

TOTAL

RELINQUISHED BY: (Signature) DATE/TIME 8/5/08 1800 RECEIVED BY: (Signature) Fed ex
RELINQUISHED BY: (Signature) Fed ex DATE/TIME 8/6/08 10:30 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☐
OTHER ☒ 3-day

LABORATORY USE ONLY:
RECEIVING TEMP: 2.0° THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☒ CARRIER BILL # Fedex
☐ APC DELIVERY
☐ HAND DELIVERED



FedEx. US Airbill
Express

FedEx Tracking Number 8645 0316 9700

0200 Recipient's Copy

1 From
Date 8/5/08
Sender's Name Barnett Clark Phone 5173296060
Company TEC
Address 505 E. Huntland Dr #250
City Austin State TX ZIP 78752

2 Your Internal Billing Reference 161638

3 To
Recipient's Name ~~Recipient~~ Receiving Phone 517 388-8222
Company DHS Analytical
Recipient's Address
We cannot deliver to P.O. boxes or P.O. ZIP codes.
Address 2300 Double Creek Dr
To request a package be held at a specific FedEx location, print FedEx address here.
City Round Rock State TX ZIP 78664

8645 0316 9700

4a Express Package Service — Packages up to 150 lbs.
- [X] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate. * To most locations.

4b Express Freight Service — Packages over 150 lbs.
- [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation. ** To most locations.

5 Packaging
- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other

* Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3.
- [ ] SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- [ ] HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.
- [X] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment Bill to: — Enter FedEx Acct. No. or Credit Card No. below.
- [X] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Obtain Recip. Acct. No. [ ]

Total Packages | Total Weight | Total Declared Value* $ .00

*Our liability is limited to $100 unless you declare a higher value. See back for details. Credit Card Auth.

8 Residential Delivery Signature Options — If you require a signature, check Direct or Indirect.
- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Someone at recipient's address may sign for delivery. Fee applies.
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. Fee applies.

520

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fedex.com 1.800.GoFedEx 1.800.463.3339

CUSTODY SEAL
DATE 8/5/08
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

FedEx US Airbill
Express

FedEx Tracking Number 8645 0316 9696

0200 **Recipient's Copy**

1 From

Date 8/5/08

Sender's Name [redacted] Phone [redacted]

Company [redacted]

Address [redacted] Dept./Floor/Suite/Room

City [redacted] State [redacted] ZIP [redacted]

2 Your Internal Billing Reference 161638

3 To

Recipient's Name [redacted] Phone [redacted]

Company [redacted]

Recipient's Address [redacted] Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address [redacted]

To request a package be held at a specific FedEx location, print FedEx address here.

City [redacted] State [redacted] ZIP [redacted]

8645 0316 9696

4a Express Package Service *Packages up to 150 lbs.*

- [x] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service *Packages over 150 lbs.*

- [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation. ** To most locations.

5 Packaging

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [x] Other

* Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- [ ] HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice, UN 1845 ____ x ____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging. [ ] Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below. Obtain Recip. Acct. No. [ ]

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages	Total Weight	Total Declared Value†
1		$ .00

†Our liability is limited to $100 unless you declare a higher value. See back for details. Credit Card Auth.

8 Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. *Fee applies.*

520

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fedex.com 1.800.GoFedEx 1.800.463.3339

CUSTODY SEAL
DATE: 8/5/08
SIGNATURE [signature]

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

DHL Analytical

Sample Receipt Checklist

Client Name **TRC Environmental Corp.** Date Received: **8/6/2008**

Work Order Number **0808039** Received by **JB**

Checklist completed by: _____ 8/6/08 Reviewed by (DL) 8/6/08
Signature Date Initials Date

Carrier name: FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Adjusted? NO Checked by _____

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Page 1 of 1

DHL Analytical Date: 08/13/08

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Method E300 - Anions Analyis
Method SW6020 - Metals Analysis
Method M2320 B (18th edition) - Alkalinity Analysis
Method M2540C (18th edition) - TDS Analysis
Method M2540 B (18th edition) - Specific Conductance
Method M450-H+ B (18th edition) - pH of a Water

LOG IN

Samples were received and log-in performed on 8/6/08. A total of 13 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 8/6/08 the matrix spike and matrix spike duplicate recoveries were out of control limits for a few analytes. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was not from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.

ANIONS ANALYSIS

For Anions analysis performed on 8/6/08 the matrix spike and matrix spike duplicate recoveries (0808039-01B MS/MSD) were slightly below control limits for Chloride. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

TDS ANALYSIS

For TDS analysis samples W-MW-02 and W-MW-03 had the TDS/Conductivity ratio above control limits due to the nature of the samples (silty).

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recv'd
0808039-01	W-MW-02		08/05/08 10:15 AM	08/06/08
0808039-02	W-MW-03		08/05/08 11:00 AM	08/06/08
0808039-03	W-MW-01		08/05/08 11:45 AM	08/06/08
0808039-04	W-MW-15		08/05/08 12:15 PM	08/06/08
0808039-05	W-MW-16		08/05/08 01:35 PM	08/06/08
0808039-06	W-MW-04		08/05/08 02:45 PM	08/06/08
0808039-07	W-MW-11		08/05/08 03:30 PM	08/06/08
0808039-08	W-MW-13		08/05/08 10:35 AM	08/06/08
0808039-09	W-MW-9		08/05/08 11:30 AM	08/06/08
0808039-10	W-WW-Milford-2		08/05/08 01:09 PM	08/06/08
0808039-11	W-MW-8		08/05/08 02:20 PM	08/06/08
0808039-12	W-MW-8D		08/05/08 02:20 PM	08/06/08
0808039-13	W-MW-7		08/05/08 03:25 PM	08/06/08

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
0808039-01A	W-MW-02	08/05/08 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-02	08/05/08 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
0808039-01B	W-MW-02	08/05/08 10:15 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-02	08/05/08 10:15 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-02	08/05/08 10:15 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-02	08/05/08 10:15 AM	Aqueous	M2320 B	Alkalinity	08/07/08 11:28 AM	R39059
0808039-01C	W-MW-02	08/05/08 10:15 AM	Aqueous	M4500-H+ B	pH	08/06/08 11:22 AM	R39026
0808039-01D	W-MW-02	08/05/08 10:15 AM	Aqueous	M2510 B	Specific Conductance	08/06/08	CONDW-8/6/08
	W-MW-02	08/05/08 10:15 AM	Aqueous	M2540C	Total Dissolved Solids	08/06/08	TDS_W-8/6/08
0808039-02A	W-MW-03	08/05/08 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-03	08/05/08 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-03	08/05/08 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
0808039-02B	W-MW-03	08/05/08 11:00 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-03	08/05/08 11:00 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-03	08/05/08 11:00 AM	Aqueous	M2320 B	Alkalinity	08/07/08 11:37 AM	R39059
0808039-02C	W-MW-03	08/05/08 11:00 AM	Aqueous	M4500-H+ B	pH	08/06/08 11:23 AM	R39026
0808039-02D	W-MW-03	08/05/08 11:00 AM	Aqueous	M2510 B	Specific Conductance	08/06/08	CONDW-8/6/08
	W-MW-03	08/05/08 11:00 AM	Aqueous	M2540C	Total Dissolved Solids	08/06/08	TDS_W-8/6/08
0808039-03A	W-MW-01	08/05/08 11:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-01	08/05/08 11:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
0808039-03B	W-MW-01	08/05/08 11:45 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-01	08/05/08 11:45 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-01	08/05/08 11:45 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-01	08/05/08 11:45 AM	Aqueous	M2320 B	Alkalinity	08/07/08 11:48 AM	R39059
0808039-03C	W-MW-01	08/05/08 11:45 AM	Aqueous	M4500-H+ B	pH	08/06/08 11:24 AM	R39026
0808039-03D	W-MW-01	08/05/08 11:45 AM	Aqueous	M2510 B	Specific Conductance	08/06/08	CONDW-8/6/08
	W-MW-01	08/05/08 11:45 AM	Aqueous	M2540C	Total Dissolved Solids	08/06/08	TDS_W-8/6/08
0808039-04A	W-MW-15	08/05/08 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-15	08/05/08 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
0808039-04B	W-MW-15	08/05/08 12:15 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-15	08/05/08 12:15 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-15	08/05/08 12:15 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-15	08/05/08 12:15 PM	Aqueous	M2320 B	Alkalinity	08/07/08 11:59 AM	R39059
0808039-04C	W-MW-15	08/05/08 12:15 PM	Aqueous	M4500-H+ B	pH	08/06/08 11:26 AM	R39026
0808039-04D	W-MW-15	08/05/08 12:15 PM	Aqueous	M2510 B	Specific Conductance	08/06/08	CONDW-8/6/08
	W-MW-15	08/05/08 12:15 PM	Aqueous	M2540C	Total Dissolved Solids	08/06/08	TDS_W-8/6/08
0808039-05A	W-MW-16	08/05/08 01:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-16	08/05/08 01:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-16	08/05/08 01:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
0808039-05B	W-MW-16	08/05/08 01:35 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-16	08/05/08 01:35 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-16	08/05/08 01:35 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-16	08/05/08 01:35 PM	Aqueous	M2320 B	Alkalinity	08/07/08 12:05 PM	R39059
0808039-05C	W-MW-16	08/05/08 01:35 PM	Aqueous	M4500-H+ B	pH	08/06/08 11:27 AM	R39026
0808039-05D	W-MW-16	08/05/08 01:35 PM	Aqueous	M2510 B	Specific Conductance	08/06/08	CONDW-8/6/08
	W-MW-16	08/05/08 01:35 PM	Aqueous	M2540C	Total Dissolved Solids	08/06/08	TDS_W-8/6/08
0808039-06A	W-MW-04	08/05/08 02:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-04	08/05/08 02:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-04	08/05/08 02:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
0808039-06B	W-MW-04	08/05/08 02:45 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-04	08/05/08 02:45 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-04	08/05/08 02:45 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-04	08/05/08 02:45 PM	Aqueous	M2320 B	Alkalinity	08/07/08 12:15 PM	R39059
0808039-06C	W-MW-04	08/05/08 02:45 PM	Aqueous	M4500-H+ B	pH	08/06/08 11:28 AM	R39026
0808039-06D	W-MW-04	08/05/08 02:45 PM	Aqueous	M2510 B	Specific Conductance	08/06/08	CONDW-8/6/08
	W-MW-04	08/05/08 02:45 PM	Aqueous	M2540C	Total Dissolved Solids	08/06/08	TDS_W-8/6/08
0808039-07A	W-MW-11	08/05/08 03:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-11	08/05/08 03:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
0808039-07B	W-MW-11	08/05/08 03:30 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-11	08/05/08 03:30 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-11	08/05/08 03:30 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-11	08/05/08 03:30 PM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-11	08/05/08 03:30 PM	Aqueous	M2320 B	Alkalinity	08/07/08 12:28 PM	R39059
0808039-07C	W-MW-11	08/05/08 03:30 PM	Aqueous	M4500-H+ B	pH	08/06/08 11:29 AM	R39026
0808039-07D	W-MW-11	08/05/08 03:30 PM	Aqueous	M2510 B	Specific Conductance	08/06/08	CONDW-8/6/08
	W-MW-11	08/05/08 03:30 PM	Aqueous	M2540C	Total Dissolved Solids	08/06/08	TDS_W-8/6/08
0808039-08A	W-MW-13	08/05/08 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-13	08/05/08 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-13	08/05/08 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
0808039-08B	W-MW-13	08/05/08 10:35 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-13	08/05/08 10:35 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-13	08/05/08 10:35 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-13	08/05/08 10:35 AM	Aqueous	E300	Anions by IC method - Water	08/11/08	R39093
	W-MW-13	08/05/08 10:35 AM	Aqueous	M2320 B	Alkalinity	08/07/08 12:36 PM	R39059
0808039-08C	W-MW-13	08/05/08 10:35 AM	Aqueous	M4500-H+ B	pH	08/06/08 11:30 AM	R39026
0808039-08D	W-MW-13	08/05/08 10:35 AM	Aqueous	M2510 B	Specific Conductance	08/06/08	CONDW-8/6/08
	W-MW-13	08/05/08 10:35 AM	Aqueous	M2540C	Total Dissolved Solids	08/07/08	TDS_W-8/7/08
0808039-09A	W-MW-9	08/05/08 11:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-9	08/05/08 11:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-9	08/05/08 11:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
0808039-09B	W-MW-9	08/05/08 11:30 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-9	08/05/08 11:30 AM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-9	08/05/08 11:30 AM	Aqueous	M2320 B	Alkalinity	08/07/08 12:46 PM	R39059
0808039-09C	W-MW-9	08/05/08 11:30 AM	Aqueous	M4500-H+ B	pH	08/06/08 11:32 AM	R39026
0808039-09D	W-MW-9	08/05/08 11:30 AM	Aqueous	M2510 B	Specific Conductance	08/06/08	CONDW-8/6/08
	W-MW-9	08/05/08 11:30 AM	Aqueous	M2540C	Total Dissolved Solids	08/07/08	TDS_W-8/7/08
0808039-10A	W-WW-Milford-2	08/05/08 01:09 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
	W-WW-Milford-2	08/05/08 01:09 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
0808039-10B	W-WW-Milford-2	08/05/08 01:09 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-WW-Milford-2	08/05/08 01:09 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-WW-Milford-2	08/05/08 01:09 PM	Aqueous	M2320 B	Alkalinity	08/07/08 10:28 AM	R39052
0808039-10C	W-WW-Milford-2	08/05/08 01:09 PM	Aqueous	M4500-H+ B	pH	08/06/08 11:33 AM	R39026
0808039-10D	W-WW-Milford-2	08/05/08 01:09 PM	Aqueous	M2510 B	Specific Conductance	08/07/08	CONDW-08/07/08
	W-WW-Milford-2	08/05/08 01:09 PM	Aqueous	M2540C	Total Dissolved Solids	08/07/08	TDS_W-8/7/08
0808039-11A	W-MW-8	08/05/08 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-8	08/05/08 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
0808039-11B	W-MW-8	08/05/08 02:20 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-8	08/05/08 02:20 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-8	08/05/08 02:20 PM	Aqueous	M2320 B	Alkalinity	08/07/08 10:39 AM	R39052
0808039-11C	W-MW-8	08/05/08 02:20 PM	Aqueous	M4500-H+ B	pH	08/06/08 11:36 AM	R39026
0808039-11D	W-MW-8	08/05/08 02:20 PM	Aqueous	M2510 B	Specific Conductance	08/07/08	CONDW-08/07/08
	W-MW-8	08/05/08 02:20 PM	Aqueous	M2540C	Total Dissolved Solids	08/07/08	TDS_W-8/7/08
0808039-12A	W-MW-8D	08/05/08 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-8D	08/05/08 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
0808039-12B	W-MW-8D	08/05/08 02:20 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-8D	08/05/08 02:20 PM	Aqueous	E300	Anions by IC method - Water	08/07/08	R39029
	W-MW-8D	08/05/08 02:20 PM	Aqueous	M2320 B	Alkalinity	08/07/08 10:51 AM	R39052
0808039-12C	W-MW-8D	08/05/08 02:20 PM	Aqueous	M4500-H+ B	pH	08/06/08 11:37 AM	R39026
0808039-12D	W-MW-8D	08/05/08 02:20 PM	Aqueous	M2510 B	Specific Conductance	08/07/08	CONDW-08/07/08
	W-MW-8D	08/05/08 02:20 PM	Aqueous	M2540C	Total Dissolved Solids	08/07/08	TDS_W-8/7/08
0808039-13A	W-MW-7	08/05/08 03:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
	W-MW-7	08/05/08 03:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/06/08 11:44 AM	31239
0808039-13B	W-MW-7	08/05/08 03:25 PM	Aqueous	E300	Anions by IC method - Water	08/06/08	R39029
	W-MW-7	08/05/08 03:25 PM	Aqueous	E300	Anions by IC method - Water	08/07/08	R39029
	W-MW-7	08/05/08 03:25 PM	Aqueous	M2320 B	Alkalinity	08/07/08 10:58 AM	R39052
0808039-13C	W-MW-7	08/05/08 03:25 PM	Aqueous	M4500-H+ B	pH	08/06/08 11:38 AM	R39026

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
0808039-13D	W-MW-7	08/05/08 03:25 PM	Aqueous	M2510 B	Specific Conductance	08/07/08	CONDW-08/07/08
	W-MW-7	08/05/08 03:25 PM	Aqueous	M2540C	Total Dissolved Solids	08/07/08	TDS_W-8/7/08

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
0808039-01A	W-MW-02	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1000	08/06/08 07:40 PM	ICP-MS3_080806A
	W-MW-02	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	10	08/07/08 07:02 PM	ICP-MS3_080807A
0808039-01B	W-MW-02	Aqueous	M2320 B	Alkalinity	R39059	1	08/07/08 11:28 AM	TITRATOR_080807B
	W-MW-02	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 12:57 PM	IC_080806A
	W-MW-02	Aqueous	E300	Anions by IC method - Water	R39029	10	08/06/08 05:43 PM	IC_080806A
	W-MW-02	Aqueous	E300	Anions by IC method - Water	R39029	100	08/06/08 06:57 PM	IC_080806A
0808039-01C	W-MW-02	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:22 AM	TITRATOR_080806A
0808039-01D	W-MW-02	Aqueous	M2510 B	Specific Conductance	CONDW-8/6/08	1	08/06/08 02:05 PM	WC_080806A
	W-MW-02	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/6/08	1	08/06/08 03:45 PM	WC_080806C
0808039-02A	W-MW-03	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1000	08/06/08 07:45 PM	ICP-MS3_080806A
	W-MW-03	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	100	08/07/08 02:08 PM	ICP-MS3_080807A
	W-MW-03	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	10	08/07/08 07:07 PM	ICP-MS3_080807A
0808039-02B	W-MW-03	Aqueous	M2320 B	Alkalinity	R39059	1	08/07/08 11:37 AM	TITRATOR_080807B
	W-MW-03	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 01:13 PM	IC_080806A
	W-MW-03	Aqueous	E300	Anions by IC method - Water	R39029	100	08/06/08 05:58 PM	IC_080806A
0808039-02C	W-MW-03	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:23 AM	TITRATOR_080806A
0808039-02D	W-MW-03	Aqueous	M2510 B	Specific Conductance	CONDW-8/6/08	1	08/06/08 02:05 PM	WC_080806A
	W-MW-03	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/6/08	1	08/06/08 03:45 PM	WC_080806C
0808039-03A	W-MW-01	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1000	08/06/08 08:53 PM	ICP-MS3_080806A
	W-MW-01	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	10	08/07/08 08:09 PM	ICP-MS3_080807A
0808039-03B	W-MW-01	Aqueous	M2320 B	Alkalinity	R39059	1	08/07/08 11:48 AM	TITRATOR_080807B
	W-MW-01	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 01:28 PM	IC_080806A
	W-MW-01	Aqueous	E300	Anions by IC method - Water	R39029	100	08/06/08 07:42 PM	IC_080806A
	W-MW-01	Aqueous	E300	Anions by IC method - Water	R39029	500	08/06/08 07:58 PM	IC_080806A
0808039-03C	W-MW-01	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:24 AM	TITRATOR_080806A
0808039-03D	W-MW-01	Aqueous	M2510 B	Specific Conductance	CONDW-8/6/08	5	08/06/08 02:05 PM	WC_080806A
	W-MW-01	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/6/08	1	08/06/08 03:45 PM	WC_080806C
0808039-04A	W-MW-15	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1000	08/06/08 08:58 PM	ICP-MS3_080806A
	W-MW-15	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	10	08/07/08 08:14 PM	ICP-MS3_080807A

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
0808039-04B	W-MW-15	Aqueous	M2320 B	Alkalinity	R39059	1	08/07/08 11:59 AM	TITRATOR_080807B
	W-MW-15	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 01:43 PM	IC_080806A
	W-MW-15	Aqueous	E300	Anions by IC method - Water	R39029	100	08/06/08 08:14 PM	IC_080806A
	W-MW-15	Aqueous	E300	Anions by IC method - Water	R39093	100	08/11/08 08:25 PM	IC2_080811A
0808039-04C	W-MW-15	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:26 AM	TITRATOR_080806A
0808039-04D	W-MW-15	Aqueous	M2510 B	Specific Conductance	CONDW-8/6/08	1	08/06/08 02:05 PM	WC_080806A
	W-MW-15	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/6/08	1	08/06/08 03:45 PM	WC_080806C
0808039-05A	W-MW-16	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1000	08/06/08 09:03 PM	ICP-MS3_080806A
	W-MW-16	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	100	08/07/08 02:45 PM	ICP-MS3_080807A
	W-MW-16	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	10	08/07/08 08:19 PM	ICP-MS3_080807A
0808039-05B	W-MW-16	Aqueous	M2320 B	Alkalinity	R39059	1	08/07/08 12:05 PM	TITRATOR_080807B
	W-MW-16	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 01:59 PM	IC_080806A
	W-MW-16	Aqueous	E300	Anions by IC method - Water	R39029	100	08/06/08 08:45 PM	IC_080806A
	W-MW-16	Aqueous	E300	Anions by IC method - Water	R39093	100	08/11/08 08:40 PM	IC2_080811A
0808039-05C	W-MW-16	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:27 AM	TITRATOR_080806A
0808039-05D	W-MW-16	Aqueous	M2510 B	Specific Conductance	CONDW-8/6/08	1	08/06/08 02:05 PM	WC_080806A
	W-MW-16	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/6/08	1	08/06/08 03:45 PM	WC_080806C
0808039-06A	W-MW-04	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1000	08/06/08 09:08 PM	ICP-MS3_080806A
	W-MW-04	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	100	08/07/08 02:50 PM	ICP-MS3_080807A
	W-MW-04	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	10	08/07/08 08:24 PM	ICP-MS3_080807A
0808039-06B	W-MW-04	Aqueous	M2320 B	Alkalinity	R39059	1	08/07/08 12:15 PM	TITRATOR_080807B
	W-MW-04	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 03:21 PM	IC_080806A
	W-MW-04	Aqueous	E300	Anions by IC method - Water	R39029	100	08/06/08 09:16 PM	IC_080806A
	W-MW-04	Aqueous	E300	Anions by IC method - Water	R39029	1000	08/06/08 09:32 PM	IC_080806A
0808039-06C	W-MW-04	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:28 AM	TITRATOR_080806A
0808039-06D	W-MW-04	Aqueous	M2510 B	Specific Conductance	CONDW-8/6/08	5	08/06/08 02:05 PM	WC_080806A
	W-MW-04	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/6/08	1	08/06/08 03:45 PM	WC_080806C
0808039-07A	W-MW-11	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1000	08/06/08 09:50 PM	ICP-MS3_080806A
	W-MW-11	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	100	08/07/08 02:55 PM	ICP-MS3_080807A

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
0808039-07B	W-MW-11	Aqueous	M2320 B	Alkalinity	R39059	1	08/07/08 12:28 PM	TITRATOR_080807B
	W-MW-11	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 03:37 PM	IC_080806A
	W-MW-11	Aqueous	E300	Anions by IC method - Water	R39029	100	08/06/08 09:48 PM	IC_080806A
	W-MW-11	Aqueous	E300	Anions by IC method - Water	R39029	1000	08/06/08 10:04 PM	IC_080806A
	W-MW-11	Aqueous	E300	Anions by IC method - Water	R39093	500	08/11/08 08:55 PM	IC2_080811A
0808039-07C	W-MW-11	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:29 AM	TITRATOR_080806A
0808039-07D	W-MW-11	Aqueous	M2510 B	Specific Conductance	CONDW-8/6/08	5	08/06/08 02:05 PM	WC_080806A
	W-MW-11	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/6/08	1	08/06/08 03:45 PM	WC_080806C
0808039-08A	W-MW-13	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1000	08/06/08 09:55 PM	ICP-MS3_080806A
	W-MW-13	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	100	08/07/08 03:01 PM	ICP-MS3_080807A
	W-MW-13	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	10	08/07/08 08:30 PM	ICP-MS3_080807A
0808039-08B	W-MW-13	Aqueous	M2320 B	Alkalinity	R39059	1	08/07/08 12:36 PM	TITRATOR_080807B
	W-MW-13	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 03:53 PM	IC_080806A
	W-MW-13	Aqueous	E300	Anions by IC method - Water	R39029	100	08/06/08 10:19 PM	IC_080806A
	W-MW-13	Aqueous	E300	Anions by IC method - Water	R39029	1000	08/06/08 10:35 PM	IC_080806A
	W-MW-13	Aqueous	E300	Anions by IC method - Water	R39093	500	08/11/08 09:09 PM	IC2_080811A
0808039-08C	W-MW-13	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:30 AM	TITRATOR_080806A
0808039-08D	W-MW-13	Aqueous	M2510 B	Specific Conductance	CONDW-8/6/08	5	08/06/08 02:05 PM	WC_080806A
	W-MW-13	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/7/08	1	08/07/08 02:30 PM	WC_080807B
0808039-09A	W-MW-9	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	50	08/07/08 03:16 PM	ICP-MS3_080807A
	W-MW-9	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1	08/07/08 11:41 PM	ICP-MS3_080807A
	W-MW-9	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	50	08/11/08 11:10 PM	ICP-MS3_080811A
0808039-09B	W-MW-9	Aqueous	M2320 B	Alkalinity	R39059	1	08/07/08 12:46 PM	TITRATOR_080807B
	W-MW-9	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 04:09 PM	IC_080806A
	W-MW-9	Aqueous	E300	Anions by IC method - Water	R39029	10	08/06/08 10:51 PM	IC_080806A
0808039-09C	W-MW-9	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:32 AM	TITRATOR_080806A
0808039-09D	W-MW-9	Aqueous	M2510 B	Specific Conductance	CONDW-8/6/08	1	08/06/08 02:05 PM	WC_080806A
	W-MW-9	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/7/08	1	08/07/08 02:30 PM	WC_080807B
0808039-10A	W-WW-Milford-2	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1000	08/06/08 10:06 PM	ICP-MS3_080806A

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
	W-WW-Milford-2	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	50	08/07/08 06:46 PM	ICP-MS3_080807A
0808039-10B	W-WW-Milford-2	Aqueous	M2320 B	Alkalinity	R39052	1	08/07/08 10:28 AM	TITRATOR_080807A
	W-WW-Milford-2	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 04:24 PM	IC_080806A
	W-WW-Milford-2	Aqueous	E300	Anions by IC method - Water	R39029	500	08/06/08 11:06 PM	IC_080806A
0808039-10C	W-WW-Milford-2	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:33 AM	TITRATOR_080806A
0808039-10D	W-WW-Milford-2	Aqueous	M2510 B	Specific Conductance	CONDW-08/07/08	1	08/07/08 11:40 AM	WC_080807A
	W-WW-Milford-2	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/7/08	1	08/07/08 02:30 PM	WC_080807B
0808039-11A	W-MW-8	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1000	08/07/08 01:07 PM	ICP-MS3_080807A
	W-MW-8	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	100	08/07/08 06:51 PM	ICP-MS3_080807A
0808039-11B	W-MW-8	Aqueous	M2320 B	Alkalinity	R39052	1	08/07/08 10:39 AM	TITRATOR_080807A
	W-MW-8	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 04:40 PM	IC_080806A
	W-MW-8	Aqueous	E300	Anions by IC method - Water	R39029	100	08/06/08 11:38 PM	IC_080806A
0808039-11C	W-MW-8	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:36 AM	TITRATOR_080806A
0808039-11D	W-MW-8	Aqueous	M2510 B	Specific Conductance	CONDW-08/07/08	5	08/07/08 11:40 AM	WC_080807A
	W-MW-8	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/7/08	1	08/07/08 02:30 PM	WC_080807B
0808039-12A	W-MW-8D	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	1000	08/06/08 10:16 PM	ICP-MS3_080806A
	W-MW-8D	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	100	08/07/08 06:57 PM	ICP-MS3_080807A
0808039-12B	W-MW-8D	Aqueous	M2320 B	Alkalinity	R39052	1	08/07/08 10:51 AM	TITRATOR_080807A
	W-MW-8D	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 04:56 PM	IC_080806A
	W-MW-8D	Aqueous	E300	Anions by IC method - Water	R39029	1000	08/07/08 12:41 AM	IC_080806A
0808039-12C	W-MW-8D	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:37 AM	TITRATOR_080806A
0808039-12D	W-MW-8D	Aqueous	M2510 B	Specific Conductance	CONDW-08/07/08	5	08/07/08 11:40 AM	WC_080807A
	W-MW-8D	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/7/08	1	08/07/08 02:30 PM	WC_080807B
0808039-13A	W-MW-7	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	10	08/07/08 08:35 PM	ICP-MS3_080807A
	W-MW-7	Aqueous	SW6020	Trace Metals: ICP-MS - Water	31239	50	08/11/08 03:25 PM	ICP-MS3_080811A
0808039-13B	W-MW-7	Aqueous	M2320 B	Alkalinity	R39052	1	08/07/08 10:58 AM	TITRATOR_080807A
	W-MW-7	Aqueous	E300	Anions by IC method - Water	R39029	1	08/06/08 05:11 PM	IC_080806A
	W-MW-7	Aqueous	E300	Anions by IC method - Water	R39029	10	08/07/08 01:12 AM	IC_080806A
0808039-13C	W-MW-7	Aqueous	M4500-H+ B	pH	R39026	1	08/06/08 11:38 AM	TITRATOR_080806A

CLIENT: TRC Environmental Corp.
Project: RRC -Wendkirk BMP
Lab Order: 0808039

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
0808039-13D	W-MW-7	Aqueous	M2510 B	Specific Conductance	CONDW-08/07/08	1	08/07/08 11:40 AM	WC_080807A
	W-MW-7	Aqueous	M2540C	Total Dissolved Solids	TDS_W-8/7/08	1	08/07/08 02:30 PM	WC_080807B

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-02
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-01
Project No:	161638	Collection Date:	08/05/08 10:15 AM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	738	100	100		mg/L	1000	08/06/08 07:40 PM
Magnesium	166	100	100		mg/L	1000	08/06/08 07:40 PM
Potassium	9.72	1.00	1.00		mg/L	10	08/07/08 07:02 PM
Sodium	106	100	100		mg/L	1000	08/06/08 07:40 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	0.595	0.300	1.00	J	mg/L	1	08/06/08 12:57 PM
Chloride	156	3.00	10.0		mg/L	10	08/06/08 05:43 PM
Sulfate	1980	100	300		mg/L	100	08/06/08 06:57 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	185	10.0	20.0		mg/L	1	08/07/08 11:28 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 11:28 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 11:28 AM
Alkalinity, Total (As CaCO3)	185	10.0	20.0		mg/L	1	08/07/08 11:28 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	7.06	0	0		pH Units	1	08/06/08 11:22 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	3390	10.0	10.0		µmhos/cm	1	08/06/08 02:05 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	3310	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-03
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-02
Project No:	161638	Collection Date:	08/05/08 11:00 AM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	585	10.0	10.0		mg/L	100	08/07/08 02:08 PM
Magnesium	576	10.0	10.0		mg/L	100	08/07/08 02:08 PM
Potassium	17.9	1.00	1.00		mg/L	10	08/07/08 07:07 PM
Sodium	1180	100	100		mg/L	1000	08/06/08 07:45 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	4.48	0.300	1.00		mg/L	1	08/06/08 01:13 PM
Chloride	2450	30.0	100		mg/L	100	08/06/08 05:58 PM
Sulfate	3360	100	300		mg/L	100	08/06/08 05:58 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	320	10.0	20.0		mg/L	1	08/07/08 11:37 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 11:37 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 11:37 AM
Alkalinity, Total (As CaCO3)	320	10.0	20.0		mg/L	1	08/07/08 11:37 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.86	0	0		pH Units	1	08/06/08 11:23 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	11400	10.0	10.0		µmhos/cm	1	08/06/08 02:05 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	9800	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/13/08

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-01
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-03
Project No:	161638	Collection Date:	08/05/08 11:45 AM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	664	100	100		mg/L	1000	08/06/08 08:53 PM
Magnesium	679	100	100		mg/L	1000	08/06/08 08:53 PM
Potassium	63.0	1.00	1.00		mg/L	10	08/07/08 08:09 PM
Sodium	4800	100	100		mg/L	1000	08/06/08 08:53 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	16.2	0.300	1.00		mg/L	1	08/06/08 01:28 PM
Chloride	8180	150	500		mg/L	500	08/06/08 07:58 PM
Sulfate	5410	100	300		mg/L	100	08/06/08 07:42 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	384	10.0	20.0		mg/L	1	08/07/08 11:48 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 11:48 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 11:48 AM
Alkalinity, Total (As CaCO3)	384	10.0	20.0		mg/L	1	08/07/08 11:48 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.94	0	0		pH Units	1	08/06/08 11:24 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	33800	50.0	50.0		µmhos/cm	5	08/06/08 02:05 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	22000	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-15
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-04
Project No:	161638	Collection Date:	08/05/08 12:15 PM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	574	100	100		mg/L	1000	08/06/08 08:58 PM
Magnesium	465	100	100		mg/L	1000	08/06/08 08:58 PM
Potassium	37.2	1.00	1.00		mg/L	10	08/07/08 08:14 PM
Sodium	1850	100	100		mg/L	1000	08/06/08 08:58 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	6.69	0.300	1.00		mg/L	1	08/06/08 01:43 PM
Chloride	2620	30.0	100		mg/L	100	08/11/08 08:25 PM
Sulfate	4670	100	300		mg/L	100	08/11/08 08:25 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	373	10.0	20.0		mg/L	1	08/07/08 11:59 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 11:59 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 11:59 AM
Alkalinity, Total (As CaCO3)	373	10.0	20.0		mg/L	1	08/07/08 11:59 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	7.03	0	0		pH Units	1	08/06/08 11:26 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	12600	10.0	10.0		µmhos/cm	1	08/06/08 02:05 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	10500	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

DHL Analytical

Date: 08/13/08

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-16
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-05
Project No:	161638	Collection Date:	08/05/08 01:35 PM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	233	10.0	10.0		mg/L	100	08/07/08 02:45 PM
Magnesium	138	10.0	10.0		mg/L	100	08/07/08 02:45 PM
Potassium	25.6	1.00	1.00		mg/L	10	08/07/08 08:19 PM
Sodium	571	10.0	10.0		mg/L	100	08/07/08 02:45 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	3.46	0.300	1.00		mg/L	1	08/06/08 01:59 PM
Chloride	1440	30.0	100		mg/L	100	08/06/08 08:45 PM
Sulfate	888	100	300		mg/L	100	08/06/08 08:45 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	237	10.0	20.0		mg/L	1	08/07/08 12:05 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 12:05 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 12:05 PM
Alkalinity, Total (As CaCO3)	237	10.0	20.0		mg/L	1	08/07/08 12:05 PM
pH		**M4500-H+ B**					**Analyst: SW**
pH	7.32	0	0		pH Units	1	08/06/08 11:27 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	4520	10.0	10.0		µmhos/cm	1	08/06/08 02:05 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	3070	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-04
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-06
Project No:	161638	Collection Date:	08/05/08 02:45 PM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	724	10.0	10.0		mg/L	100	08/07/08 02:50 PM
Magnesium	317	10.0	10.0		mg/L	100	08/07/08 02:50 PM
Potassium	67.0	1.00	1.00		mg/L	10	08/07/08 08:24 PM
Sodium	3090	100	100		mg/L	1000	08/06/08 09:08 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	10.3	0.300	1.00		mg/L	1	08/06/08 03:21 PM
Chloride	5820	300	1000		mg/L	1000	08/06/08 09:32 PM
Sulfate	1750	100	300		mg/L	100	08/06/08 09:16 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	317	10.0	20.0		mg/L	1	08/07/08 12:15 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 12:15 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 12:15 PM
Alkalinity, Total (As CaCO3)	317	10.0	20.0		mg/L	1	08/07/08 12:15 PM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.88	0	0		pH Units	1	08/06/08 11:28 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	20300	50.0	50.0		µmhos/cm	5	08/06/08 02:05 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	12800	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-11
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-07
Project No:	161638	Collection Date:	08/05/08 03:30 PM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	764	10.0	10.0		mg/L	100	08/07/08 02:55 PM
Magnesium	273	10.0	10.0		mg/L	100	08/07/08 02:55 PM
Potassium	53.0	10.0	10.0		mg/L	100	08/07/08 02:55 PM
Sodium	4420	100	100		mg/L	1000	08/06/08 09:50 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	14.4	0.300	1.00		mg/L	1	08/06/08 03:37 PM
Chloride	5250	300	1000		mg/L	1000	08/06/08 10:04 PM
Sulfate	1070	100	300		mg/L	100	08/06/08 09:48 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	262	10.0	20.0		mg/L	1	08/07/08 12:28 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 12:28 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 12:28 PM
Alkalinity, Total (As CaCO3)	262	10.0	20.0		mg/L	1	08/07/08 12:28 PM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.87	0	0		pH Units	1	08/06/08 11:29 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	21800	50.0	50.0		µmhos/cm	5	08/06/08 02:05 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	13200	10.0	10.0		mg/L	1	08/06/08 03:45 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-13
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-08
Project No:	161638	Collection Date:	08/05/08 10:35 AM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	748	10.0	10.0		mg/L	100	08/07/08 03:01 PM
Magnesium	262	10.0	10.0		mg/L	100	08/07/08 03:01 PM
Potassium	24.2	1.00	1.00		mg/L	10	08/07/08 08:30 PM
Sodium	2520	100	100		mg/L	1000	08/06/08 09:55 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	21.0	0.300	1.00		mg/L	1	08/06/08 03:53 PM
Chloride	5590	150	500		mg/L	500	08/11/08 09:09 PM
Sulfate	2160	100	300		mg/L	100	08/06/08 10:19 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	272	10.0	20.0		mg/L	1	08/07/08 12:36 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 12:36 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 12:36 PM
Alkalinity, Total (As CaCO3)	272	10.0	20.0		mg/L	1	08/07/08 12:36 PM
pH		**M4500-H+ B**					**Analyst: SW**
pH	6.99	0	0		pH Units	1	08/06/08 11:30 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	21000	50.0	50.0		µmhos/cm	5	08/06/08 02:05 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	13200	10.0	10.0		mg/L	1	08/07/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-9
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-09
Project No:	161638	Collection Date:	08/05/08 11:30 AM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	84.6	5.00	5.00		mg/L	50	08/11/08 11:10 PM
Magnesium	35.6	5.00	5.00		mg/L	50	08/11/08 11:10 PM
Potassium	8.31	0.100	0.100		mg/L	1	08/07/08 11:41 PM
Sodium	347	5.00	5.00		mg/L	50	08/11/08 11:10 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	0.850	0.300	1.00	J	mg/L	1	08/06/08 04:09 PM
Chloride	217	3.00	10.0		mg/L	10	08/06/08 10:51 PM
Sulfate	333	10.0	30.0		mg/L	10	08/06/08 10:51 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	440	10.0	20.0		mg/L	1	08/07/08 12:46 PM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 12:46 PM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 12:46 PM
Alkalinity, Total (As CaCO3)	440	10.0	20.0		mg/L	1	08/07/08 12:46 PM
pH		**M4500-H+ B**					**Analyst: SW**
pH	7.44	0	0		pH Units	1	08/06/08 11:32 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	2220	10.0	10.0		µmhos/cm	1	08/06/08 02:05 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	1530	10.0	10.0		mg/L	1	08/07/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-WW-Milford-2
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-10
Project No:	161638	Collection Date:	08/05/08 01:09 PM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	229	5.00	5.00		mg/L	50	08/07/08 06:46 PM
Magnesium	118	5.00	5.00		mg/L	50	08/07/08 06:46 PM
Potassium	44.2	5.00	5.00		mg/L	50	08/07/08 06:46 PM
Sodium	2470	100	100		mg/L	1000	08/06/08 10:06 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	1.38	0.300	1.00		mg/L	1	08/06/08 04:24 PM
Chloride	800	150	500		mg/L	500	08/06/08 11:06 PM
Sulfate	4890	500	1500		mg/L	500	08/06/08 11:06 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	431	10.0	20.0		mg/L	1	08/07/08 10:28 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 10:28 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 10:28 AM
Alkalinity, Total (As CaCO3)	431	10.0	20.0		mg/L	1	08/07/08 10:28 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	7.22	0	0		pH Units	1	08/06/08 11:33 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	11200	10.0	10.0		µmhos/cm	1	08/07/08 11:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	9980	10.0	10.0		mg/L	1	08/07/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-8
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-11
Project No:	161638	Collection Date:	08/05/08 02:20 PM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	433	10.0	10.0		mg/L	100	08/07/08 06:51 PM
Magnesium	162	10.0	10.0		mg/L	100	08/07/08 06:51 PM
Potassium	73.4	10.0	10.0		mg/L	100	08/07/08 06:51 PM
Sodium	4560	100	100		mg/L	1000	08/07/08 01:07 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	10.9	0.300	1.00		mg/L	1	08/06/08 04:40 PM
Chloride	4120	30.0	100		mg/L	100	08/06/08 11:38 PM
Sulfate	5480	100	300		mg/L	100	08/06/08 11:38 PM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	384	10.0	20.0		mg/L	1	08/07/08 10:39 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 10:39 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 10:39 AM
Alkalinity, Total (As CaCO3)	384	10.0	20.0		mg/L	1	08/07/08 10:39 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	7.06	0	0		pH Units	1	08/06/08 11:36 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	22300	50.0	50.0		µmhos/cm	5	08/07/08 11:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	16100	10.0	10.0		mg/L	1	08/07/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-8D
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-12
Project No:	161638	Collection Date:	08/05/08 02:20 PM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	426	100	100		mg/L	1000	08/06/08 10:16 PM
Magnesium	188	10.0	10.0		mg/L	100	08/07/08 06:57 PM
Potassium	84.6	10.0	10.0		mg/L	100	08/07/08 06:57 PM
Sodium	4720	100	100		mg/L	1000	08/06/08 10:16 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	10.9	0.300	1.00		mg/L	1	08/06/08 04:56 PM
Chloride	5530	300	1000		mg/L	1000	08/07/08 12:41 AM
Sulfate	6700	1000	3000		mg/L	1000	08/07/08 12:41 AM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	423	10.0	20.0		mg/L	1	08/07/08 10:51 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 10:51 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 10:51 AM
Alkalinity, Total (As CaCO3)	423	10.0	20.0		mg/L	1	08/07/08 10:51 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	7.09	0	0		pH Units	1	08/06/08 11:37 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	27300	50.0	50.0		µmhos/cm	5	08/07/08 11:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	19000	10.0	10.0		mg/L	1	08/07/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-7
Project:	RRC -Wendkirk BMP	Lab ID:	0808039-13
Project No:	161638	Collection Date:	08/05/08 03:25 PM
Lab Order:	0808039	Matrix:	Aqueous

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: AJR**
Calcium	142	5.00	5.00		mg/L	50	08/11/08 03:25 PM
Magnesium	32.1	1.00	1.00		mg/L	10	08/07/08 08:35 PM
Potassium	12.5	1.00	1.00		mg/L	10	08/07/08 08:35 PM
Sodium	264	5.00	5.00		mg/L	50	08/11/08 03:25 PM
Anions by IC method - Water		**E300**					**Analyst: JBC**
Bromide	0.569	0.300	1.00	J	mg/L	1	08/06/08 05:11 PM
Chloride	184	3.00	10.0		mg/L	10	08/07/08 01:12 AM
Sulfate	493	10.0	30.0		mg/L	10	08/07/08 01:12 AM
Alkalinity		**M2320 B**					**Analyst: SW**
Alkalinity, Bicarbonate (As CaCO3)	269	10.0	20.0		mg/L	1	08/07/08 10:58 AM
Alkalinity, Carbonate (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 10:58 AM
Alkalinity, Hydroxide (As CaCO3)	ND	10.0	20.0		mg/L	1	08/07/08 10:58 AM
Alkalinity, Total (As CaCO3)	269	10.0	20.0		mg/L	1	08/07/08 10:58 AM
pH		**M4500-H+ B**					**Analyst: SW**
pH	7.41	0	0		pH Units	1	08/06/08 11:38 AM
Specific Conductance		**M2510 B**					**Analyst: SW**
Specific Conductance	1930	10.0	10.0		µmhos/cm	1	08/07/08 11:40 AM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	1370	10.0	10.0		mg/L	1	08/07/08 02:30 PM

Qualifiers:

*	Value exceeds TCLP Maximum Concentration Level	J	Analyte detected between MDL and RL
B	Analyte detected in the associated Method Blank	MDL	Method Detection Limit
C	Sample Result or QC discussed in the Case Narrative	N	Parameter not NELAC certified
DF	Dilution Factor	ND	Not Detected at the Method Detection Limit
E	TPH pattern not Gas or Diesel Range Pattern	RL	Reporting Limit
		S	Spike Recovery outside control limits

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080806A

Sample ID:	MB-31239	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	MBLK	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 06:58 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		ND	0.100								
Magnesium		ND	0.100								
Potassium		ND	0.100								
Sodium		ND	0.100								

Sample ID:	LCS-31239	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	LCS	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 07:04 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4.42	0.100	5.00	0	88.4	80	120			
Magnesium		4.45	0.100	5.00	0	89.0	80	120			
Potassium		4.69	0.100	5.00	0	93.8	80	120			
Sodium		4.40	0.100	5.00	0	88.0	80	120			

Sample ID:	LCSD-31239	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	LCSD	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 07:09 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4.44	0.100	5.00	0	88.9	80	120	0.474	15	
Magnesium		4.48	0.100	5.00	0	89.5	80	120	0.560	15	
Potassium		4.71	0.100	5.00	0	94.1	80	120	0.341	15	
Sodium		4.42	0.100	5.00	0	88.5	80	120	0.499	15	

Sample ID:	0808041-03A SD	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	SD	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 07:19 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		1400	500	0	1350				3.38	10	
Magnesium		618	500	0	603				2.47	10	
Sodium		1380	500	0	1440				3.83	10	

Sample ID:	0808041-03A PDS	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	PDS	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 07:24 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		5860	100	5000	1350	90.2	75	125			
Magnesium		5120	100	5000	603	90.3	75	125			
Sodium		5820	100	5000	1440	87.6	75	125			

Sample ID:	0808041-03A MS	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	MS	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 07:29 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		1380	100	5.00	1350	540	80	120			S
Magnesium		624	100	5.00	603	416	80	120			S
Sodium		1480	100	5.00	1440	960	80	120			S

Sample ID:	0808041-03A MSD	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	MSD	Run ID:	ICP-MS3_080806A		Analysis Date:		08/06/08 07:35 PM		Prep Date:		08/06/08

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080806A

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	1340	100	5.00	1350	-240	80	120	2.87	15	S
Magnesium	600	100	5.00	603	-54.0	80	120	3.84	15	S
Sodium	1430	100	5.00	1440	-160	80	120	3.85	15	S

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080806A

Sample ID:	ICV1-080806	Batch ID:	R39067	TestNo:	SW6020	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS3_080806A	Analysis Date:	08/06/08 01:49 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	2.49	0.100	2.50	0	99.4	90	110			
Magnesium	2.46	0.100	2.50	0	98.4	90	110			
Potassium	2.48	0.100	2.50	0	99.2	90	110			
Sodium	2.46	0.100	2.50	0	98.5	90	110			

Sample ID:	CCV1-080806	Batch ID:	R39067	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080806A	Analysis Date:	08/06/08 06:27 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.86	0.100	5.00	0	97.2	90	110			
Magnesium	4.84	0.100	5.00	0	96.7	90	110			
Potassium	5.14	0.100	5.00	0	103	90	110			
Sodium	4.78	0.100	5.00	0	95.6	90	110			

Sample ID:	CCV2-080806	Batch ID:	R39067	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080806A	Analysis Date:	08/06/08 07:50 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.86	0.100	5.00	0	97.2	90	110			
Magnesium	4.88	0.100	5.00	0	97.5	90	110			
Potassium	5.09	0.100	5.00	0	102	90	110			
Sodium	4.76	0.100	5.00	0	95.2	90	110			

Sample ID:	CCV3-080806	Batch ID:	R39067	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080806A	Analysis Date:	08/06/08 09:14 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.87	0.100	5.00	0	97.4	90	110			
Magnesium	4.88	0.100	5.00	0	97.5	90	110			
Sodium	4.78	0.100	5.00	0	95.5	90	110			

Sample ID:	CCV4-080806	Batch ID:	R39067	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080806A	Analysis Date:	08/06/08 10:42 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.87	0.100	5.00	0	97.3	90	110			
Sodium	4.64	0.100	5.00	0	92.7	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080807A

Sample ID:	0808041-03A SD	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	SD	Run ID:	ICP-MS3_080807A		Analysis Date:		08/07/08 07:17 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		14.0	5.00	0	14.3				2.51	10	

Sample ID:	0808041-03A PDS	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	PDS	Run ID:	ICP-MS3_080807A		Analysis Date:		08/07/08 07:22 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		61.8	1.00	50.0	14.3	95.0	75	125			

Sample ID:	0808041-03A MS	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	MS	Run ID:	ICP-MS3_080807A		Analysis Date:		08/07/08 07:28 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		19.8	1.00	5.00	14.3	110	80	120			

Sample ID:	0808041-03A MSD	Batch ID:	31239		TestNo:		SW6020		Units:		mg/L
SampType:	MSD	Run ID:	ICP-MS3_080807A		Analysis Date:		08/07/08 07:33 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium		18.8	1.00	5.00	14.3	88.4	80	120	5.65	15	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080807A

Sample ID:	ICV1-080807	Batch ID:	R39068	TestNo:	SW6020	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS3_080807A	Analysis Date:	08/07/08 12:31 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	2.41	0.100	2.50	0	96.4	90	110			
Magnesium	2.44	0.100	2.50	0	97.5	90	110			
Potassium	2.43	0.100	2.50	0	97.4	90	110			
Sodium	2.45	0.100	2.50	0	98.0	90	110			

Sample ID:	CCV1-080807	Batch ID:	R39068	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080807A	Analysis Date:	08/07/08 01:55 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.89	0.100	5.00	0	97.8	90	110			
Magnesium	4.78	0.100	5.00	0	95.6	90	110			
Potassium	4.92	0.100	5.00	0	98.4	90	110			
Sodium	4.74	0.100	5.00	0	94.8	90	110			

Sample ID:	CCV2-080807	Batch ID:	R39068	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080807A	Analysis Date:	08/07/08 03:22 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.84	0.100	5.00	0	96.9	90	110			
Magnesium	4.83	0.100	5.00	0	96.6	90	110			
Potassium	5.03	0.100	5.00	0	101	90	110			
Sodium	4.76	0.100	5.00	0	95.3	90	110			

Sample ID:	ICV2-080807	Batch ID:	R39068	TestNo:	SW6020	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS3_080807A	Analysis Date:	08/07/08 06:15 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	2.38	0.100	2.50	0	95.2	90	110			
Magnesium	2.42	0.100	2.50	0	96.8	90	110			
Potassium	2.43	0.100	2.50	0	97.0	90	110			

Sample ID:	CCV3-080807	Batch ID:	R39068	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080807A	Analysis Date:	08/07/08 07:38 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.80	0.100	5.00	0	96.0	90	110			
Magnesium	5.10	0.100	5.00	0	102	90	110			
Potassium	4.97	0.100	5.00	0	99.5	90	110			

Sample ID:	CCV4-080807	Batch ID:	R39068	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080807A	Analysis Date:	08/07/08 09:01 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Magnesium	5.15	0.100	5.00	0	103	90	110			
Potassium	4.99	0.100	5.00	0	99.8	90	110			

Sample ID:	CCV5-080807	Batch ID:	R39068	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080807A	Analysis Date:	08/07/08 10:28 PM	Prep Date:	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080807A

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium	4.96	0.100	5.00	0	99.1	90	110			

Sample ID:	CCV6-080807	Batch ID:	R39068	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080807A	Analysis Date:	08/07/08 11:51 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Potassium	4.88	0.100	5.00	0	97.7	90	110			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080811A

Sample ID:	ICV1-080811	Batch ID:	R39104	TestNo:	SW6020	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 01:19 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	2.41	0.100	2.50	0	96.4	90	110			
Magnesium	2.43	0.100	2.50	0	97.0	90	110			
Sodium	2.42	0.100	2.50	0	96.8	90	110			

Sample ID:	CCV1-080811	Batch ID:	R39104	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 02:34 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.98	0.100	5.00	0	99.6	90	110			
Sodium	5.02	0.100	5.00	0	100	90	110			

Sample ID:	CCV2-080811	Batch ID:	R39104	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 03:35 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.88	0.100	5.00	0	97.7	90	110			
Sodium	4.86	0.100	5.00	0	97.2	90	110			

Sample ID:	CCV7-080811	Batch ID:	R39104	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 10:28 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.85	0.100	5.00	0	96.9	90	110			
Magnesium	4.89	0.100	5.00	0	97.9	90	110			
Sodium	4.74	0.100	5.00	0	94.7	90	110			

Sample ID:	CCV8-080811	Batch ID:	R39104	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080811A	Analysis Date:	08/11/08 11:15 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.87	0.100	5.00	0	97.3	90	110			
Magnesium	4.88	0.100	5.00	0	97.5	90	110			
Sodium	4.68	0.100	5.00	0	93.5	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080806A

Sample ID:	ICV-080806	Batch ID:	R39029		TestNo:		E300		Units:		mg/L
SampType:	ICV	Run ID:	IC_080806A		Analysis Date:		08/06/08 10:11 AM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		49.7	1.00	50.00	0	99.5	90	110			
Chloride		24.7	1.00	25.00	0	98.7	90	110			
Sulfate		74.5	3.00	75.00	0	99.4	90	110			

Sample ID:	MB-080806	Batch ID:	R39029		TestNo:		E300		Units:		mg/L
SampType:	MBLK	Run ID:	IC_080806A		Analysis Date:		08/06/08 12:04 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		ND	1.00								
Chloride		ND	1.00								
Sulfate		ND	3.00								

Sample ID:	LCS-080806	Batch ID:	R39029		TestNo:		E300		Units:		mg/L
SampType:	LCS	Run ID:	IC_080806A		Analysis Date:		08/06/08 12:20 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.7	1.00	20.00	0	98.4	90	110			
Chloride		9.55	1.00	10.00	0	95.5	90	110			
Sulfate		29.2	3.00	30.00	0	97.4	90	110			

Sample ID:	LCSD-080806	Batch ID:	R39029		TestNo:		E300		Units:		mg/L
SampType:	LCSD	Run ID:	IC_080806A		Analysis Date:		08/06/08 12:35 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.7	1.00	20.00	0	98.7	90	110	0.283	20	
Chloride		9.58	1.00	10.00	0	95.8	90	110	0.365	20	
Sulfate		29.3	3.00	30.00	0	97.7	90	110	0.335	20	

Sample ID:	0808039-01B MS	Batch ID:	R39029		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC_080806A		Analysis Date:		08/06/08 02:15 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		18.9	1.00	20.00	0.3600	92.9	90	110			

Sample ID:	0808039-01B MSD	Batch ID:	R39029		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC_080806A		Analysis Date:		08/06/08 02:30 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.1	1.00	20.00	0.3600	93.7	90	110	0.843	20	

Sample ID:	CCV1-080806	Batch ID:	R39029		TestNo:		E300		Units:		mg/L
SampType:	CCV	Run ID:	IC_080806A		Analysis Date:		08/06/08 03:02 PM		Prep Date:		08/06/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide		19.5	1.00	20.00	0	97.6	90	110			
Chloride		9.67	1.00	10.00	0	96.7	90	110			
Sulfate		30.2	3.00	30.00	0	101	90	110			

Sample ID:	CCV2-080806	Batch ID:	R39029		TestNo:		E300		Units:		mg/L
SampType:	CCV	Run ID:	IC_080806A		Analysis Date:		08/06/08 06:13 PM		Prep Date:		08/06/08

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080806A

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Bromide	19.5	1.00	20.00	0	97.4	90	110			
Chloride	9.74	1.00	10.00	0	97.4	90	110			
Sulfate	29.8	3.00	30.00	0	99.4	90	110			

Sample ID: 0808039-01B MS Batch ID: R39029 TestNo: E300 Units: mg/L
SampType: MS Run ID: IC_080806A Analysis Date: 08/06/08 06:28 PM Prep Date: 08/06/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	177	10.0	100.0	93.58	83.4	90	110			S

Sample ID: 0808039-01B MSD Batch ID: R39029 TestNo: E300 Units: mg/L
SampType: MSD Run ID: IC_080806A Analysis Date: 08/06/08 06:42 PM Prep Date: 08/06/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	178	10.0	100.0	93.58	84.9	90	110	0.820	20	S

Sample ID: 0808039-01B MS Batch ID: R39029 TestNo: E300 Units: mg/L
SampType: MS Run ID: IC_080806A Analysis Date: 08/06/08 07:12 PM Prep Date: 08/06/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate	4060	300	3000	1185	95.9	90	110			

Sample ID: 0808039-01B MSD Batch ID: R39029 TestNo: E300 Units: mg/L
SampType: MSD Run ID: IC_080806A Analysis Date: 08/06/08 07:26 PM Prep Date: 08/06/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate	4070	300	3000	1185	96.2	90	110	0.251	20	

Sample ID: CCV3-080806 Batch ID: R39029 TestNo: E300 Units: mg/L
SampType: CCV Run ID: IC_080806A Analysis Date: 08/06/08 09:01 PM Prep Date: 08/06/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	9.60	1.00	10.00	0	96.0	90	110			
Sulfate	29.3	3.00	30.00	0	97.6	90	110			

Sample ID: CCV4-080806 Batch ID: R39029 TestNo: E300 Units: mg/L
SampType: CCV Run ID: IC_080806A Analysis Date: 08/07/08 12:09 AM Prep Date: 08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	9.47	1.00	10.00	0	94.7	90	110			
Sulfate	29.1	3.00	30.00	0	97.1	90	110			

Sample ID: 0808039-13B MS Batch ID: R39029 TestNo: E300 Units: mg/L
SampType: MS Run ID: IC_080806A Analysis Date: 08/07/08 01:28 AM Prep Date: 08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	205	10.0	100.0	110.2	95.1	90	110			
Sulfate	588	30.0	300.0	295.8	97.3	90	110			

Sample ID: 0808039-13B MSD Batch ID: R39029 TestNo: E300 Units: mg/L
SampType: MSD Run ID: IC_080806A Analysis Date: 08/07/08 01:43 AM Prep Date: 08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	205	10.0	100.0	110.2	94.8	90	110	0.136	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC_080806A

Sulfate		589	30.0	300.0	295.8	97.6	90	110	0.150	20

Sample ID:	CCV5-080806	Batch ID:	R39029	TestNo:	E300	Units:	mg/L
SampType:	CCV	Run ID:	IC_080806A	Analysis Date:	08/07/08 02:15 AM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	9.50	1.00	10.00	0	95.0	90	110			
Sulfate	28.9	3.00	30.00	0	96.2	90	110			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_080811A

Sample ID:	ICV-080811	Batch ID:	R39093		TestNo:		E300		Units:		mg/L
SampType:	ICV	Run ID:	IC2_080811A		Analysis Date:		08/11/08 09:12 AM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		26.3	1.00	25.00	0	105	90	110			
Sulfate		77.4	3.00	75.00	0	103	90	110			

Sample ID:	MB-080811	Batch ID:	R39093		TestNo:		E300		Units:		mg/L
SampType:	MBLK	Run ID:	IC2_080811A		Analysis Date:		08/11/08 09:34 AM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		ND	1.00								
Sulfate		ND	3.00								

Sample ID:	LCS-080811	Batch ID:	R39093		TestNo:		E300		Units:		mg/L
SampType:	LCS	Run ID:	IC2_080811A		Analysis Date:		08/11/08 09:48 AM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		9.86	1.00	10.00	0	98.6	90	110			
Sulfate		29.8	3.00	30.00	0	99.3	90	110			

Sample ID:	LCSD-080811	Batch ID:	R39093		TestNo:		E300		Units:		mg/L
SampType:	LCSD	Run ID:	IC2_080811A		Analysis Date:		08/11/08 10:03 AM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		9.75	1.00	10.00	0	97.5	90	110	1.14	20	
Sulfate		29.6	3.00	30.00	0	98.7	90	110	0.602	20	

Sample ID:	CCV1-080811	Batch ID:	R39093		TestNo:		E300		Units:		mg/L
SampType:	CCV	Run ID:	IC2_080811A		Analysis Date:		08/11/08 12:00 PM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		9.79	1.00	10.00	0	97.9	90	110			
Sulfate		29.6	3.00	30.00	0	98.7	90	110			

Sample ID:	0808040-03B MS	Batch ID:	R39093		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC2_080811A		Analysis Date:		08/11/08 01:14 PM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		16700	500	5000	11340	107	90	110			

Sample ID:	0808040-03B MSD	Batch ID:	R39093		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC2_080811A		Analysis Date:		08/11/08 01:28 PM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		16700	500	5000	11340	106	90	110	0.285	20	

Sample ID:	0808040-03B MS	Batch ID:	R39093		TestNo:		E300		Units:		mg/L
SampType:	MS	Run ID:	IC2_080811A		Analysis Date:		08/11/08 01:43 PM		Prep Date:		08/11/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		1700	60.0	600.0	1065	106	90	110			

Sample ID:	0808040-03B MSD	Batch ID:	R39093		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC2_080811A		Analysis Date:		08/11/08 01:58 PM		Prep Date:		08/11/08

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_080811A

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate	1700	60.0	600.0	1065	106	90	110	0.131	20	

Sample ID:	CCV2-080811	Batch ID:	R39093	TestNo:	E300	Units:	mg/L
SampType:	CCV	Run ID:	IC2_080811A	Analysis Date:	08/11/08 02:42 PM	Prep Date:	08/11/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	9.83	1.00	10.00	0	98.3	90	110			
Sulfate	29.5	3.00	30.00	0	98.3	90	110			

Sample ID:	CCV4-080811	Batch ID:	R39093	TestNo:	E300	Units:	mg/L
SampType:	CCV	Run ID:	IC2_080811A	Analysis Date:	08/11/08 08:11 PM	Prep Date:	08/11/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	10.6	1.00	10.00	0	106	90	110			
Sulfate	30.0	3.00	30.00	0	99.8	90	110			

Sample ID:	CCV5-080811	Batch ID:	R39093	TestNo:	E300	Units:	mg/L
SampType:	CCV	Run ID:	IC2_080811A	Analysis Date:	08/11/08 09:24 PM	Prep Date:	08/11/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	9.78	1.00	10.00	0	97.8	90	110			
Sulfate	29.7	3.00	30.00	0	98.9	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080806A

Sample ID:	ICV-080806	Batch ID:	R39026	TestNo:	M4500-H+ B	Units:	pH Units
SampType:	ICV	Run ID:	TITRATOR_080806A	Analysis Date:	08/06/08 11:21 AM	Prep Date:	08/06/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH	9.98	0	10.00	0	99.8	99	101			

Sample ID:	0808039-10C DUP	Batch ID:	R39026	TestNo:	M4500-H+ B	Units:	pH Units
SampType:	DUP	Run ID:	TITRATOR_080806A	Analysis Date:	08/06/08 11:34 AM	Prep Date:	08/06/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH	7.24	0	0	7.220				0.277	5	

Sample ID:	0808032-02F DUP	Batch ID:	R39026	TestNo:	M4500-H+ B	Units:	pH Units
SampType:	DUP	Run ID:	TITRATOR_080806A	Analysis Date:	08/06/08 11:43 AM	Prep Date:	08/06/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH	7.11	0	0	7.130				0.281	5	

Sample ID:	CCV-080806	Batch ID:	R39026	TestNo:	M4500-H+ B	Units:	pH Units
SampType:	CCV	Run ID:	TITRATOR_080806A	Analysis Date:	08/06/08 11:44 AM	Prep Date:	08/06/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
pH	7.03	0	7.000	0	100	97.1	102.9			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080807A

Sample ID:	ICV-080807	Batch ID:	R39052	TestNo:	M2320 B	Units:	mg/L
SampType:	ICV	Run ID:	TITRATOR_080807A	Analysis Date:	08/07/08 08:27 AM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	15.7	20.0	0							
Alkalinity, Carbonate (As CaCO3)	86.6	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	102	20.0	100.0	0	102	98	102			

Sample ID:	MB-080807	Batch ID:	R39052	TestNo:	M2320 B	Units:	mg/L
SampType:	MBLK	Run ID:	TITRATOR_080807A	Analysis Date:	08/07/08 08:28 AM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID:	LCS-080807	Batch ID:	R39052	TestNo:	M2320 B	Units:	mg/L
SampType:	LCS	Run ID:	TITRATOR_080807A	Analysis Date:	08/07/08 08:32 AM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	0	20.0	0							
Alkalinity, Carbonate (As CaCO3)	45.0	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	51.8	20.0	50.00	0	104	74	129			

Sample ID:	CCV1-080807	Batch ID:	R39052	TestNo:	M2320 B	Units:	mg/L
SampType:	CCV	Run ID:	TITRATOR_080807A	Analysis Date:	08/07/08 09:36 AM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	19.0	20.0	0							
Alkalinity, Carbonate (As CaCO3)	82.1	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	101	20.0	100.0	0	101	90	110			

Sample ID:	0808041-13B DUP	Batch ID:	R39052	TestNo:	M2320 B	Units:	mg/L
SampType:	DUP	Run ID:	TITRATOR_080807A	Analysis Date:	08/07/08 10:13 AM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	331	20.0	0	332.4				0.483	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	331	20.0	0	332.4				0.483	20	

Sample ID:	0808039-13B DUP	Batch ID:	R39052	TestNo:	M2320 B	Units:	mg/L
SampType:	DUP	Run ID:	TITRATOR_080807A	Analysis Date:	08/07/08 11:05 AM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	267	20.0	0	268.7				0.567	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	267	20.0	0	268.7				0.567	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080807A

Sample ID:	CCV2-080807	Batch ID:	R39052	TestNo:		M2320 B		Units:		mg/L	
SampType:	CCV	Run ID:	TITRATOR_080807A	Analysis Date:		08/07/08 11:10 AM		Prep Date:		08/07/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)		20.3	20.0	0							
Alkalinity, Carbonate (As CaCO3)		81.6	20.0	0							
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0							
Alkalinity, Total (As CaCO3)		102	20.0	100.0	0	102	90	110			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080807B

Sample ID:	ICV-080807	Batch ID:	R39059	TestNo:	M2320 B	Units:	mg/L
SampType:	ICV	Run ID:	TITRATOR_080807B	Analysis Date:	08/07/08 08:27 AM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	15.7	20.0	0							
Alkalinity, Carbonate (As CaCO3)	86.6	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	102	20.0	100.0	0	102	98	102			

Sample ID:	MB2-080807	Batch ID:	R39059	TestNo:	M2320 B	Units:	mg/L
SampType:	MBLK	Run ID:	TITRATOR_080807B	Analysis Date:	08/07/08 11:19 AM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	20.0								
Alkalinity, Carbonate (As CaCO3)	ND	20.0								
Alkalinity, Hydroxide (As CaCO3)	ND	20.0								
Alkalinity, Total (As CaCO3)	ND	20.0								

Sample ID:	LCS2-080807	Batch ID:	R39059	TestNo:	M2320 B	Units:	mg/L
SampType:	LCS	Run ID:	TITRATOR_080807B	Analysis Date:	08/07/08 11:23 AM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	0	20.0	0							
Alkalinity, Carbonate (As CaCO3)	47.0	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	51.7	20.0	50.00	0	103	74	129			

Sample ID:	CCV3-080807	Batch ID:	R39059	TestNo:	M2320 B	Units:	mg/L
SampType:	CCV	Run ID:	TITRATOR_080807B	Analysis Date:	08/07/08 12:20 PM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	21.1	20.0	0							
Alkalinity, Carbonate (As CaCO3)	80.8	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	102	20.0	100.0	0	102	90	110			

Sample ID:	0808040-01B DUP	Batch ID:	R39059	TestNo:	M2320 B	Units:	mg/L
SampType:	DUP	Run ID:	TITRATOR_080807B	Analysis Date:	08/07/08 01:03 PM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Carbonate (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	0	20.0	0	0				0	20	

Sample ID:	CCV4-080807	Batch ID:	R39059	TestNo:	M2320 B	Units:	mg/L
SampType:	CCV	Run ID:	TITRATOR_080807B	Analysis Date:	08/07/08 02:01 PM	Prep Date:	08/07/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	20.2	20.0	0							
Alkalinity, Carbonate (As CaCO3)	82.1	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	0	20.0	0							
Alkalinity, Total (As CaCO3)	102	20.0	100.0	0	102	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_080807B

Sample ID:	0808032-02F DUP	Batch ID:	R39059	TestNo:	M2320 B			Units:	mg/L		
SampType:	DUP	Run ID:	TITRATOR_080807B	Analysis Date:	08/07/08 02:40 PM			Prep Date:	08/07/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)		275	20.0	0	277.2				0.811	20	
Alkalinity, Carbonate (As CaCO3)		0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)		275	20.0	0	277.2				0.811	20	

Sample ID:	CCV5-080807	Batch ID:	R39059	TestNo:	M2320 B			Units:	mg/L		
SampType:	CCV	Run ID:	TITRATOR_080807B	Analysis Date:	08/07/08 02:45 PM			Prep Date:	08/07/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)		25.0	20.0	0							
Alkalinity, Carbonate (As CaCO3)		76.8	20.0	0							
Alkalinity, Hydroxide (As CaCO3)		0	20.0	0							
Alkalinity, Total (As CaCO3)		102	20.0	100.0	0	102	90	110			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080806A

Sample ID:	ICV-080625	Batch ID:	CONDW-8/6/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	ICV	Run ID:	WC_080806A	Analysis Date:	08/06/08 02:05 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		12900	10.0	12880	0	100	95	105			

Sample ID:	MBLK-080625	Batch ID:	CONDW-8/6/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	MBLK	Run ID:	WC_080806A	Analysis Date:	08/06/08 02:05 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		ND	10.0								

Sample ID:	LCS-080625	Batch ID:	CONDW-8/6/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	LCS	Run ID:	WC_080806A	Analysis Date:	08/06/08 02:05 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		1360	10.0	1413	0	96.6	95	105			

Sample ID:	0808041-03B DUP	Batch ID:	CONDW-8/6/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	DUP	Run ID:	WC_080806A	Analysis Date:	08/06/08 02:05 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		22000	50.0	0	22550				2.24	2	

Sample ID:	0808041-04B DUP	Batch ID:	CONDW-8/6/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	DUP	Run ID:	WC_080806A	Analysis Date:	08/06/08 02:05 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		3560	10.0	0	3510				1.41	2	

Sample ID:	CCV1-080806	Batch ID:	CONDW-8/6/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	CCV	Run ID:	WC_080806A	Analysis Date:	08/06/08 02:05 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		12800	10.0	12880	0	99.1	95	105			

Sample ID:	CCV2-080806	Batch ID:	CONDW-8/6/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	CCV	Run ID:	WC_080806A	Analysis Date:	08/06/08 02:05 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		12400	10.0	12880	0	96.3	95	105			

Sample ID:	CCV3-080806	Batch ID:	CONDW-8/6/08	TestNo:	M2510 B			Units:	µmhos/cm		
SampType:	CCV	Run ID:	WC_080806A	Analysis Date:	08/06/08 02:05 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		12600	10.0	12880	0	97.8	95	105			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080806C

Sample ID:	MB-080714	Batch ID:	TDS_W-8/6/08	TestNo:	M2540C			Units:	mg/L		
SampType:	MBLK	Run ID:	WC_080806C	Analysis Date:	08/06/08 03:45 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		ND	10.0								

Sample ID:	LCS-080714	Batch ID:	TDS_W-8/6/08	TestNo:	M2540C			Units:	mg/L		
SampType:	LCS	Run ID:	WC_080806C	Analysis Date:	08/06/08 03:45 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		732	10.0	745.6	0	98.2	90	113			

Sample ID:	0808041-10B DUP	Batch ID:	TDS_W-8/6/08	TestNo:	M2540C			Units:	mg/L		
SampType:	DUP	Run ID:	WC_080806C	Analysis Date:	08/06/08 03:45 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		7460	10.0	0	7380				1.01	5	

Sample ID:	0808039-07D DUP	Batch ID:	TDS_W-8/6/08	TestNo:	M2540C			Units:	mg/L		
SampType:	DUP	Run ID:	WC_080806C	Analysis Date:	08/06/08 03:45 PM			Prep Date:	08/06/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		13600	10.0	0	13220				2.54	5	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080807A

Sample ID:	ICV-088007	Batch ID:	CONDW-08/07/08	TestNo:		M2510 B			Units:		µmhos/cm
SampType:	ICV	Run ID:	WC_080807A	Analysis Date:		08/07/08 11:40 AM			Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		12800	10.0	12880	0	99.5	95	105			

Sample ID:	MBLK-080807	Batch ID:	CONDW-08/07/08	TestNo:		M2510 B			Units:		µmhos/cm
SampType:	MBLK	Run ID:	WC_080807A	Analysis Date:		08/07/08 11:40 AM			Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		ND	10.0								

Sample ID:	LCS-080807	Batch ID:	CONDW-08/07/08	TestNo:		M2510 B			Units:		µmhos/cm
SampType:	LCS	Run ID:	WC_080807A	Analysis Date:		08/07/08 11:40 AM			Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		1360	10.0	1413	0	96.3	95	105			

Sample ID:	0808039-13D DUP	Batch ID:	CONDW-08/07/08	TestNo:		M2510 B			Units:		µmhos/cm
SampType:	DUP	Run ID:	WC_080807A	Analysis Date:		08/07/08 11:40 AM			Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		1960	10.0	0	1928				1.80	2	

Sample ID:	CCV1-080807	Batch ID:	CONDW-08/07/08	TestNo:		M2510 B			Units:		µmhos/cm
SampType:	CCV	Run ID:	WC_080807A	Analysis Date:		08/07/08 11:40 AM			Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		12700	10.0	12880	0	98.3	95	105			

Sample ID:	0808040-08C DUP	Batch ID:	CONDW-08/07/08	TestNo:		M2510 B			Units:		µmhos/cm
SampType:	DUP	Run ID:	WC_080807A	Analysis Date:		08/07/08 11:40 AM			Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		55200	50.0	0	54350				1.46	2	

Sample ID:	CCV2-080807	Batch ID:	CONDW-08/07/08	TestNo:		M2510 B			Units:		µmhos/cm
SampType:	CCV	Run ID:	WC_080807A	Analysis Date:		08/07/08 11:40 AM			Prep Date:		08/07/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Specific Conductance		12600	10.0	12880	0	97.4	95	105			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0808039
Project: RRC -Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080807B

Sample ID:	MB-080807	Batch ID:	TDS_W-8/7/08	TestNo:	M2540C			Units:		mg/L	
SampType:	MBLK	Run ID:	WC_080807B	Analysis Date:	08/07/08 02:30 PM			Prep Date:		08/07/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		ND	10.0								

Sample ID:	LCS-080807	Batch ID:	TDS_W-8/7/08	TestNo:	M2540C			Units:		mg/L	
SampType:	LCS	Run ID:	WC_080807B	Analysis Date:	08/07/08 02:30 PM			Prep Date:		08/07/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		765	10.0	745.6	0	103	90	113			

Sample ID:	0808040-04B DUP	Batch ID:	TDS_W-8/7/08	TestNo:	M2540C			Units:		mg/L	
SampType:	DUP	Run ID:	WC_080807B	Analysis Date:	08/07/08 02:30 PM			Prep Date:		08/07/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		28000	10.0	0	28500				1.63	5	

Sample ID:	0808032-02E DUP	Batch ID:	TDS_W-8/7/08	TestNo:	M2540C			Units:		mg/L	
SampType:	DUP	Run ID:	WC_080807B	Analysis Date:	08/07/08 02:30 PM			Prep Date:		08/07/08	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		2050	10.0	0	2083				1.40	5	

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

July 22, 2008

Arsin Sahba
TRC Environmental Corp.
505 East Huntland Drive Suite 250
Austin, Texas 78752

TEL: (512) 329-6080
FAX: (512) 329-8750

Order No: 0807049

RE: RRC Wendkirk BMP

Dear Arsin Sahba:

DHL Analytical received 7 sample(s) on 7/9/2008 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
Lab Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-08A-TX

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DHL ANALYTICAL

2300 Double Creek Drive • Round Rock, TX 78664
Phone (512) 388-8222 • FAX (512) 388-8229

№ 37089

CHAIN-OF-CUSTODY

CLIENT: IRC
ADDRESS: 505 E Huntland Dr Ste 250
PHONE: 512-329-6080 FAX 512-329-8750
DATA REPORTED TO: Arsin Sahba asahba@trcsolutions.com
ADDITIONAL REPORT COPIES TO: Steve Miller scmiller@trcsolutions.com

DATE: 7/7/2008 PAGE 1 OF 1
PO #: 161638.0000.0000.000001 DHL WORK ORDER #: 0807049
PROJECT LOCATION OR NAME: RRC WENDKIRK BMP
CLIENT PROJECT #: 161638 COLLECTOR: C. MANSURA, C. SMITH

Authorize 5% surcharge for TRRP report? ☐Yes ☐No

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☐ | DIESEL - MOD 8015 ☐ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | PH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE/ANIONS ☐ ALKALINITY ☐ | CATIONS (Na, Ca, Mg, K) | ANIONS (Cl, SO_4)

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	FIELD NOTES
W-MW-11	01	7-7-08	1545	W	500, 250, 250	3		X		X		
W-MW-10	02		1728	W		3		X		X		
W-MW-10-D	03		1728	W		3		X		X		QA/QC
W-MW-05	04		1844	W		3		X		X		
W-OB-01	05		2047	W		3		X		X		
W-MW-12	06	7-8-08	1214	W		3		X		X		
W-MW-17	07	7-8-08	1245	W		3		X		X		** NOTE ** Report results with TRRP-style SDLs and MDLs *** ***
TOTAL												

RELINQUISHED BY: (Signature) DATE/TIME 7-9-08 8:35 RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature)

☐ DHL DISPOSAL @ $5.00 each ☐ Return

TURN AROUND TIME
RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☑
OTHER ☐ ____

LABORATORY USE ONLY:
RECEIVING TEMP: 3.3 THERM #: 57
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # ____
☐ APC DELIVERY
☐ HAND DELIVERED

Laboratory Data Package Signature Page

This data package consists of:

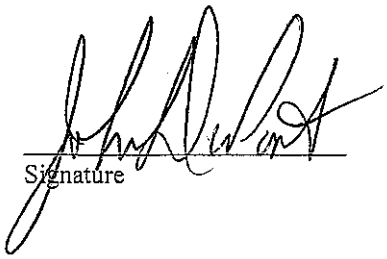
This signature page, the laboratory review checklist, and the following reportable data:

- R1 Field chain-of-custody documentation;
- R2 Sample identification cross-reference;
- R3 Test reports (analytical data sheets) for each environmental sample that includes:
  - a) Items consistent with NELAC 5.13
  - b) dilution factors,
  - c) preparation methods,
  - d) cleanup methods, and
  - e) if required for the project, tentatively identified compounds (TICs).
- R4 Surrogate recovery data including:
  - a) Calculated recovery (%R), and
  - b) The laboratory's surrogate QC limits.
- R5 Test reports/summary forms for blank samples;
- R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  - a) LCS spiking amounts,
  - b) Calculated %R for each analyte, and
  - c) The laboratory's LCS QC limits.
- R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  - a) Samples associated with the MS/MSD clearly identified,
  - b) MS/MSD spiking amounts,
  - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  - d) Calculated %Rs and relative percent differences (RPDs), and
  - e) The laboratory's MS/MSD QC limits
- R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  - a) the amount of analyte measured in the duplicate,
  - b) the calculated RPD, and
  - c) the laboratory's QC limits for analytical duplicates.
- R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;
- R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

Release Statement: I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By me signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.

Scott Schroeder – Project Manager
John DuPont – General / QA Manager



Signature

07/22/08

Date

DHL Analytical, Inc.

Laboratory Review Checklist: Reportable Data

Project Name: RRC Wendkirk BMP	Date: 7/22/08
Reviewer Name: Carlos Castro	Laboratory Work Order: 0807049
Prep Batch Number(s): See Prep Dates Report	Run Batch: See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-Custody (C-O-C)					
R1	OI	1) Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	✓				R1-01
		2) Were all departures from standard conditions described in an exception report?			✓		
R2	OI	**Sample and Quality Control (QC) Identification**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	✓				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	✓				
R3	OI	**Test Reports**					
		1) Were all samples prepared and analyzed within holding times?	✓				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	✓				
		3) Were calculations checked by a peer or supervisor?	✓				
		4) Were all analyte identifications checked by a peer or supervisor?	✓				
		5) Were sample quantitation limits reported for all analytes not detected?	✓				
		6) Were all results for soil and sediment samples reported on a dry weight basis?			✓		
		7) Were % moisture (or solids) reported for all soil and sediment samples?			✓		
		8) If required for the project, TICs reported?			✓		
R4	O	**Surrogate Recovery Data**					
		1) Were surrogates added prior to extraction?			✓		
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?			✓		
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		1) Were appropriate type(s) of blanks analyzed?	✓				
		2) Were blanks analyzed at the appropriate frequency?	✓				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	✓				
		4) Were blank concentrations < MQL?	✓				
R6	OI	**Laboratory Control Samples (LCS):**					
		1) Were all COCs included in the LCS?	✓				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	✓				
		3) Were LCSs analyzed at the required frequency?	✓				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	✓				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SQLs?	✓				
		6) Was the LCSD RPD within QC limits (if applicable)?	✓				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data**					
		1) Were the project/method specified analytes included in the MS and MSD?	✓				
		2) Were MS/MSD analyzed at the appropriate frequency?	✓				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		✓			R7-03
		4) Were MS/MSD RPDs within laboratory QC limits?	✓				
R8	OI	**Analytical Duplicate Data**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	✓				
		2) Were analytical duplicates analyzed at the appropriate frequency?	✓				
		3) Were RPDs or relative standard deviations within the laboratory QC limits? 7/22/08	x	✓			R8-03
R9	OI	**Method Quantitation Limits (MQLs):**					
		1) Are the MQLs for each method analyte included in the laboratory data package?	✓				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	✓				
		3) Are unadjusted MQLs included in the laboratory data package?	✓				
R10	OI	**Other Problems/Anomalies**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	✓				
		2) Were all necessary corrective actions performed for the reported data?	✓				
		3) Was applicable and available technology used to lower the SQL minimize the matrix interference affects on the sample results?	✓				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

DHL Analytical, Inc.

Laboratory Review Checklist (continued): Supporting Data

Project Name: RRC Wendkirk Bulf	Date: 7/22/08
Reviewer Name: Carlos Castro	Laboratory Work Order: 0807049

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	✓				
		2) Were percent RSDs or correlation coefficient criteria met?	✓				
		3) Was the number of standards recommended in the method used for all analytes?	✓				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	✓				
		5) Are ICAL data available for all instruments used?	✓				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	✓				
S2	OI	**Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):**					
		1) Was the CCV analyzed at the method-required frequency?	✓				
		2) Were percent differences for each analyte within the method-required QC limits?	✓				
		3) Was the ICAL curve verified for each analyte?	✓				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	✓				
S3	O	**Mass Spectral Tuning:**					
		1) Was the appropriate compound for the method used for tuning?	✓				
		2) Were ion abundance data within the method-required QC limits?	✓				
S4	O	**Internal Standards (IS):**					
		1) Were IS area counts and retention times within the method-required QC limits?	✓				
S5	OI	**Raw Data (NELAC section 1 appendix A glossary, and section 5.12)**					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	✓				
		2) Were data associated with manual integrations flagged on the raw data?	✓				
S6	O	**Dual Column Confirmation**					
		1) Did dual column confirmation results meet the method-required QC?			✓		
S7	O	**Tentatively Identified Compounds (TICs):**					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			✓		
S8	I	**Interference Check Sample (ICS) Results:**					
		1) Were percent recoveries within method QC limits?	✓				
S9	I	**Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions**					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	✓				
S10	OI	**Method Detection Limit (MDL) Studies**					
		1) Was a MDL study performed for each reported analyte?	✓				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	✓				
S11	OI	**Proficiency Test Reports:**					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	✓				
S12	OI	**Standards Documentation**					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	✓				
S13	OI	**Compound/Analyte Identification Procedures**					
		1) Are the procedures for compound/analyte identification documented?	✓				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		1) Was DOC conducted consistent with NELAC Chapter 5C?	✓				
		2) Is documentation of the analyst's competency up-to-date and on file?	✓				
S15	OI	**Verification/Validation Documentation for Methods** (NELAC Chap 5)					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	✓				
S16	OI	**Laboratory Standard Operating Procedures (SOPs):**					
		1) Are laboratory SOPs current and on file for each method performed?	✓				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

DHL Analytical

Sample Receipt Checklist

Client Name TRC Environmental Corp.

Date Received: 7/9/2008

Work Order Number 0807049

Received by JB

Checklist completed by: Signature 7/9/08 Date

Reviewed by: Initials DL 7/9/08 Date

Carrier name: Hand Delivered

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	Not Applicable ☐

Adjusted? NO Checked by DB

Any No response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Page 1 of 1

CLIENT: TRC Environmental Corp.
Project: RRC Wendkirk BMP
Lab Order: 0807049

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Method SW6020 - Metals Analysis
Method E300 - Anions Analysis
Method M2540C (18th edition) - TDS Analysis

Exception Report R1-01

Samples were received and log-in performed on 7/9/08 . A total of 7 samples were received. The samples arrived in good condition and were properly packaged.

Exception Report R7-03

For Metals analysis performed on 7/15/08 the matrix spike and matrix spike duplicate recoveries were out of control limits for Calcium and Sodium. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spikes and matrix spike duplicates was not from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.

Exception Report R8-03

For TDS analysis performed on 7/10/08 the sample and sample duplicate had the RPD slightly above control limits. This is flagged accordingly in the QC summary report. No further corrective actions were taken.

CLIENT: TRC Environmental Corp.
Project: RRC Wendkirk BMP
Lab Order: 0807049

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recv'd
0807049-01	W-MW-11		07/07/08 03:45 PM	07/09/08
0807049-02	W-MW-10		07/07/08 05:28 PM	07/09/08
0807049-03	W-MW-10-D		07/07/08 05:28 PM	07/09/08
0807049-04	W-MW-05		07/07/08 06:44 PM	07/09/08
0807049-05	W-OB-01		07/07/08 08:47 PM	07/09/08
0807049-06	W-MW-12		07/08/08 12:14 PM	07/09/08
0807049-07	W-MW-17		07/08/08 12:45 PM	07/09/08

CLIENT: TRC Environmental Corp.
Project: RRC Wendkirk BMP
Lab Order: 0807049

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
0807049-01A	W-MW-11	07/07/08 03:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
	W-MW-11	07/07/08 03:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
0807049-01B	W-MW-11	07/07/08 03:45 PM	Aqueous	M2540C	Total Dissolved Solids	07/10/08	TDS_W-7/10/08
0807049-01C	W-MW-11	07/07/08 03:45 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548
	W-MW-11	07/07/08 03:45 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548
0807049-02A	W-MW-10	07/07/08 05:28 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
	W-MW-10	07/07/08 05:28 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
0807049-02B	W-MW-10	07/07/08 05:28 PM	Aqueous	M2540C	Total Dissolved Solids	07/10/08	TDS_W-7/10/08
0807049-02C	W-MW-10	07/07/08 05:28 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548
	W-MW-10	07/07/08 05:28 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548
0807049-03A	W-MW-10-D	07/07/08 05:28 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
	W-MW-10-D	07/07/08 05:28 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
0807049-03B	W-MW-10-D	07/07/08 05:28 PM	Aqueous	M2540C	Total Dissolved Solids	07/10/08	TDS_W-7/10/08
0807049-03C	W-MW-10-D	07/07/08 05:28 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548
	W-MW-10-D	07/07/08 05:28 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548
0807049-04A	W-MW-05	07/07/08 06:44 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
	W-MW-05	07/07/08 06:44 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
0807049-04B	W-MW-05	07/07/08 06:44 PM	Aqueous	M2540C	Total Dissolved Solids	07/10/08	TDS_W-7/10/08
0807049-04C	W-MW-05	07/07/08 06:44 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548
	W-MW-05	07/07/08 06:44 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548
0807049-05A	W-OB-01	07/07/08 08:47 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
	W-OB-01	07/07/08 08:47 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
0807049-05B	W-OB-01	07/07/08 08:47 PM	Aqueous	M2540C	Total Dissolved Solids	07/10/08	TDS_W-7/10/08
0807049-05C	W-OB-01	07/07/08 08:47 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548
	W-OB-01	07/07/08 08:47 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548
0807049-06A	W-MW-12	07/08/08 12:14 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
	W-MW-12	07/08/08 12:14 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
0807049-06B	W-MW-12	07/08/08 12:14 PM	Aqueous	M2540C	Total Dissolved Solids	07/10/08	TDS_W-7/10/08
0807049-06C	W-MW-12	07/08/08 12:14 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548

CLIENT: TRC Environmental Corp.
Project: RRC Wendkirk BMP
Lab Order: 0807049

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
	W-MW-12	07/08/08 12:14 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548
0807049-07A	W-MW-17	07/08/08 12:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
	W-MW-17	07/08/08 12:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/10/08 09:00 AM	30919
0807049-07B	W-MW-17	07/08/08 12:45 PM	Aqueous	M2540C	Total Dissolved Solids	07/10/08	TDS_W-7/10/08
0807049-07C	W-MW-17	07/08/08 12:45 PM	Aqueous	E300	Anions by IC method - Water	07/09/08	R38548

CLIENT: TRC Environmental Corp.
Project: RRC Wendkirk BMP
Lab Order: 0807049

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
0807049-01A	W-MW-11	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	1000	07/10/08 06:28 PM	ICP-MS2_080710B
	W-MW-11	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	100	07/14/08 06:01 PM	ICP-MS2_080714A
0807049-01B	W-MW-11	Aqueous	M2540C	Total Dissolved Solids	TDS_W-7/10/08	1	07/10/08 03:00 PM	WC_080710E
0807049-01C	W-MW-11	Aqueous	E300	Anions by IC method - Water	R38548	100	07/09/08 05:13 PM	IC2_080709A
	W-MW-11	Aqueous	E300	Anions by IC method - Water	R38548	10	07/09/08 05:42 PM	IC2_080709A
0807049-02A	W-MW-10	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	5000	07/10/08 06:33 PM	ICP-MS2_080710B
	W-MW-10	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	100	07/14/08 06:06 PM	ICP-MS2_080714A
0807049-02B	W-MW-10	Aqueous	M2540C	Total Dissolved Solids	TDS_W-7/10/08	1	07/10/08 03:00 PM	WC_080710E
0807049-02C	W-MW-10	Aqueous	E300	Anions by IC method - Water	R38548	500	07/09/08 01:41 PM	IC2_080709A
	W-MW-10	Aqueous	E300	Anions by IC method - Water	R38548	100	07/09/08 05:57 PM	IC2_080709A
0807049-03A	W-MW-10-D	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	5000	07/10/08 06:39 PM	ICP-MS2_080710B
	W-MW-10-D	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	100	07/14/08 06:12 PM	ICP-MS2_080714A
0807049-03B	W-MW-10-D	Aqueous	M2540C	Total Dissolved Solids	TDS_W-7/10/08	1	07/10/08 03:00 PM	WC_080710E
0807049-03C	W-MW-10-D	Aqueous	E300	Anions by IC method - Water	R38548	500	07/09/08 01:55 PM	IC2_080709A
	W-MW-10-D	Aqueous	E300	Anions by IC method - Water	R38548	100	07/09/08 06:26 PM	IC2_080709A
0807049-04A	W-MW-05	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	5000	07/10/08 06:44 PM	ICP-MS2_080710B
	W-MW-05	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	100	07/14/08 06:18 PM	ICP-MS2_080714A
0807049-04B	W-MW-05	Aqueous	M2540C	Total Dissolved Solids	TDS_W-7/10/08	1	07/10/08 03:00 PM	WC_080710E
0807049-04C	W-MW-05	Aqueous	E300	Anions by IC method - Water	R38548	500	07/09/08 02:10 PM	IC2_080709A
	W-MW-05	Aqueous	E300	Anions by IC method - Water	R38548	50	07/09/08 06:40 PM	IC2_080709A
0807049-05A	W-OB-01	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	5000	07/10/08 06:49 PM	ICP-MS2_080710B
	W-OB-01	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	500	07/14/08 06:23 PM	ICP-MS2_080714A
0807049-05B	W-OB-01	Aqueous	M2540C	Total Dissolved Solids	TDS_W-7/10/08	1	07/10/08 03:00 PM	WC_080710E
0807049-05C	W-OB-01	Aqueous	E300	Anions by IC method - Water	R38548	1000	07/09/08 05:28 PM	IC2_080709A
	W-OB-01	Aqueous	E300	Anions by IC method - Water	R38548	20	07/09/08 06:55 PM	IC2_080709A
0807049-06A	W-MW-12	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	5000	07/10/08 06:55 PM	ICP-MS2_080710B
	W-MW-12	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	500	07/14/08 07:06 PM	ICP-MS2_080714A
0807049-06B	W-MW-12	Aqueous	M2540C	Total Dissolved Solids	TDS_W-7/10/08	1	07/10/08 03:00 PM	WC_080710E
0807049-06C	W-MW-12	Aqueous	E300	Anions by IC method - Water	R38548	500	07/09/08 02:39 PM	IC2_080709A

CLIENT: TRC Environmental Corp.
Project: RRC Wendkirk BMP
Lab Order: 0807049

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
	W-MW-12	Aqueous	E300	Anions by IC method - Water	R38548	50	07/09/08 07:12 PM	IC2_080709A
0807049-07A	W-MW-17	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	100	07/14/08 07:12 PM	ICP-MS2_080714A
	W-MW-17	Aqueous	SW6020	Trace Metals: ICP-MS - Water	30919	500	07/15/08 02:11 PM	ICP-MS3_080715A
0807049-07B	W-MW-17	Aqueous	M2540C	Total Dissolved Solids	TDS_W-7/10/08	1	07/10/08 03:00 PM	WC_080710E
0807049-07C	W-MW-17	Aqueous	E300	Anions by IC method - Water	R38548	100	07/09/08 02:54 PM	IC2_080709A

DHL Analytical

Date: 07/22/08

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-11
Project:	RRC Wendkirk BMP	Lab ID:	0807049-01
Project No:	161638	Collection Date:	07/07/08 03:45 PM
Lab Order:	0807049	Matrix:	Aqueous

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: JCG**
Calcium	499	10.0	10.0		mg/L	100	07/14/08 06:01 PM
Sodium	1840	100	100		mg/L	1000	07/10/08 06:28 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Chloride	4160	30.0	100		mg/L	100	07/09/08 05:13 PM
Sulfate	812	10.0	30.0		mg/L	10	07/09/08 05:42 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	13300	10.0	10.0		mg/L	1	07/10/08 03:00 PM

Qualifiers:

	See Final Page of Report for MQLs and MDLs	J	Analyte detected between SDL and RL
B	Analyte detected in the associated Method Blank	N	Parameter not NELAC certified
C	Sample Result or QC discussed in the Case Narrative	ND	Not Detected at the SDL
DF	Dilution Factor	RL	Reporting Limit (MQL adjusted for moisture and sample size)
E	TPH pattern not Gas or Diesel Range Pattern	S	Spike Recovery outside control limits
		SDL	Sample Detection Limit

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-10
Project:	RRC Wendkirk BMP	Lab ID:	0807049-02
Project No:	161638	Collection Date:	07/07/08 05:28 PM
Lab Order:	0807049	Matrix:	Aqueous

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: JCG**
Calcium	763	10.0	10.0		mg/L	100	07/14/08 06:06 PM
Sodium	8380	500	500		mg/L	5000	07/10/08 06:33 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Chloride	14300	150	500		mg/L	500	07/09/08 01:41 PM
Sulfate	6500	100	300		mg/L	100	07/09/08 05:57 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	32300	10.0	10.0		mg/L	1	07/10/08 03:00 PM

Qualifiers:

	See Final Page of Report for MQLs and MDLs
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between SDL and RL
N	Parameter not NELAC certified
ND	Not Detected at the SDL
RL	Reporting Limit (MQL adjusted for moisture and sample size)
S	Spike Recovery outside control limits
SDL	Sample Detection Limit

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-10-D
Project:	RRC Wendkirk BMP	Lab ID:	0807049-03
Project No:	161638	Collection Date:	07/07/08 05:28 PM
Lab Order:	0807049	Matrix:	Aqueous

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: JCG**
Calcium	760	10.0	10.0		mg/L	100	07/14/08 06:12 PM
Sodium	8520	500	500		mg/L	5000	07/10/08 06:39 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Chloride	14400	150	500		mg/L	500	07/09/08 01:55 PM
Sulfate	6510	100	300		mg/L	100	07/09/08 06:26 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	32300	10.0	10.0		mg/L	1	07/10/08 03:00 PM

Qualifiers:

	See Final Page of Report for MQLs and MDLs
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between SDL and RL
N	Parameter not NELAC certified
ND	Not Detected at the SDL
RL	Reporting Limit (MQL adjusted for moisture and sample size)
S	Spike Recovery outside control limits
SDL	Sample Detection Limit

DHL Analytical

Date: 07/22/08

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-05
Project:	RRC Wendkirk BMP	Lab ID:	0807049-04
Project No:	161638	Collection Date:	07/07/08 06:44 PM
Lab Order:	0807049	Matrix:	Aqueous

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: JCG**
Calcium	899	10.0	10.0		mg/L	100	07/14/08 06:18 PM
Sodium	7040	500	500		mg/L	5000	07/10/08 06:44 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Chloride	14600	150	500		mg/L	500	07/09/08 02:10 PM
Sulfate	2960	50.0	150		mg/L	50	07/09/08 06:40 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	28700	10.0	10.0		mg/L	1	07/10/08 03:00 PM

Qualifiers:

	See Final Page of Report for MQLs and MDLs
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between SDL and RL
N	Parameter not NELAC certified
ND	Not Detected at the SDL
RL	Reporting Limit (MQL adjusted for moisture and sample size)
S	Spike Recovery outside control limits
SDL	Sample Detection Limit

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-OB-01
Project:	RRC Wendkirk BMP	Lab ID:	0807049-05
Project No:	161638	Collection Date:	07/07/08 08:47 PM
Lab Order:	0807049	Matrix:	Aqueous

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: JCG**
Calcium	3660	50.0	50.0		mg/L	500	07/14/08 06:23 PM
Sodium	9580	500	500		mg/L	5000	07/10/08 06:49 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Chloride	29400	300	1000		mg/L	1000	07/09/08 05:28 PM
Sulfate	1960	20.0	60.0		mg/L	20	07/09/08 06:55 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	63800	10.0	10.0		mg/L	1	07/10/08 03:00 PM

Qualifiers:

	See Final Page of Report for MQLs and MDLs
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between SDL and RL
N	Parameter not NELAC certified
ND	Not Detected at the SDL
RL	Reporting Limit (MQL adjusted for moisture and sample size)
S	Spike Recovery outside control limits
SDL	Sample Detection Limit

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-12
Project:	RRC Wendkirk BMP	Lab ID:	0807049-06
Project No:	161638	Collection Date:	07/08/08 12:14 PM
Lab Order:	0807049	Matrix:	Aqueous

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: JCG**
Calcium	984	50.0	50.0		mg/L	500	07/14/08 07:06 PM
Sodium	9410	500	500		mg/L	5000	07/10/08 06:55 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Chloride	18500	150	500		mg/L	500	07/09/08 02:39 PM
Sulfate	5210	50.0	150		mg/L	50	07/09/08 07:12 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	37700	10.0	10.0		mg/L	1	07/10/08 03:00 PM

Qualifiers:

	See Final Page of Report for MQLs and MDLs
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between SDL and RL
N	Parameter not NELAC certified
ND	Not Detected at the SDL
RL	Reporting Limit (MQL adjusted for moisture and sample size)
S	Spike Recovery outside control limits
SDL	Sample Detection Limit

CLIENT:	TRC Environmental Corp.	Client Sample ID:	W-MW-17
Project:	RRC Wendkirk BMP	Lab ID:	0807049-07
Project No:	161638	Collection Date:	07/08/08 12:45 PM
Lab Order:	0807049	Matrix:	Aqueous

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
Trace Metals: ICP-MS - Water		**SW6020**					**Analyst: JCG**
Calcium	404	10.0	10.0		mg/L	100	07/14/08 07:12 PM
Sodium	2400	50.0	50.0		mg/L	500	07/15/08 02:11 PM
Anions by IC method - Water		**E300**					**Analyst: AD**
Chloride	3800	30.0	100		mg/L	100	07/09/08 02:54 PM
Sulfate	2310	100	300		mg/L	100	07/09/08 02:54 PM
Total Dissolved Solids		**M2540C**					**Analyst: SW**
Total Dissolved Solids (Residue, Filterable)	10500	10.0	10.0		mg/L	1	07/10/08 03:00 PM

Qualifiers:

	See Final Page of Report for MQLs and MDLs
B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative
DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern
J	Analyte detected between SDL and RL
N	Parameter not NELAC certified
ND	Not Detected at the SDL
RL	Reporting Limit (MQL adjusted for moisture and sample size)
S	Spike Recovery outside control limits
SDL	Sample Detection Limit

CLIENT: TRC Environmental Corp.
Work Order: 0807049
Project: RRC Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS2_080710B

Sample ID:	LCS-30919	Batch ID:	30919	TestNo:	SW6020	Units:	mg/L
SampType:	LCS	Run ID:	ICP-MS2_080710B	Analysis Date:	07/10/08 08:00 PM	Prep Date:	07/10/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.68	0.100	5.00	0	93.6	80	120			
Sodium	4.71	0.100	5.00	0	94.1	80	120			

Sample ID:	LCSD-30919	Batch ID:	30919	TestNo:	SW6020	Units:	mg/L
SampType:	LCSD	Run ID:	ICP-MS2_080710B	Analysis Date:	07/10/08 08:05 PM	Prep Date:	07/10/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.71	0.100	5.00	0	94.2	80	120	0.554	15	
Sodium	4.71	0.100	5.00	0	94.1	80	120	0.0212	15	

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0807049
Project: RRC Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS2_080710B

Sample ID:	ICV1-080710	Batch ID:	R38567		TestNo:		SW6020		Units:		mg/L
SampType:	ICV	Run ID:	ICP-MS2_080710B		Analysis Date:		07/10/08 01:43 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		2.36	0.100	2.50	0	94.4	90	110			
Sodium		2.30	0.100	2.50	0	92.1	90	110			

Sample ID:	CCV2-080710	Batch ID:	R38567		TestNo:		SW6020		Units:		mg/L
SampType:	CCV	Run ID:	ICP-MS2_080710B		Analysis Date:		07/10/08 05:55 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sodium		5.11	0.100	5.00	0	102	90	110			

Sample ID:	CCV3-080710	Batch ID:	R38567		TestNo:		SW6020		Units:		mg/L
SampType:	CCV	Run ID:	ICP-MS2_080710B		Analysis Date:		07/10/08 07:22 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		5.00	0.100	5.00	0	100	90	110			
Sodium		5.00	0.100	5.00	0	100	90	110			

Sample ID:	CCV4-080710	Batch ID:	R38567		TestNo:		SW6020		Units:		mg/L
SampType:	CCV	Run ID:	ICP-MS2_080710B		Analysis Date:		07/10/08 08:48 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4.92	0.100	5.00	0	98.3	90	110			
Sodium		5.00	0.100	5.00	0	100	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0807049
Project: RRC Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS2_080714A

Sample ID:	ICV1-080714	Batch ID:	R38611		TestNo:		SW6020		Units:		mg/L
SampType:	ICV	Run ID:	ICP-MS2_080714A		Analysis Date:		07/14/08 01:29 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		2.31	0.100	2.50	0	92.4	90	110			

Sample ID:	CCV2-080714	Batch ID:	R38611		TestNo:		SW6020		Units:		mg/L
SampType:	CCV	Run ID:	ICP-MS2_080714A		Analysis Date:		07/14/08 04:29 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		5.10	0.100	5.00	0	102	90	110			

Sample ID:	CCV3-080714	Batch ID:	R38611		TestNo:		SW6020		Units:		mg/L
SampType:	CCV	Run ID:	ICP-MS2_080714A		Analysis Date:		07/14/08 06:34 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		4.76	0.100	5.00	0	95.1	90	110			

Sample ID:	CCV4-080714	Batch ID:	R38611		TestNo:		SW6020		Units:		mg/L
SampType:	CCV	Run ID:	ICP-MS2_080714A		Analysis Date:		07/14/08 08:07 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		5.02	0.100	5.00	0	100	90	110			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0807049
Project: RRC Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080715A

Sample ID:	0807056-05A SD	Batch ID:	30919	TestNo:	SW6020			Units:	mg/L		
SampType:	SD	Run ID:	ICP-MS3_080715A	Analysis Date:	07/15/08 02:22 PM			Prep Date:	07/10/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		511	100	0	516				0.935	10	
Sodium		1450	100	0	1400				3.53	10	

Sample ID:	0807056-05A PDS	Batch ID:	30919	TestNo:	SW6020			Units:	mg/L		
SampType:	PDS	Run ID:	ICP-MS3_080715A	Analysis Date:	07/15/08 02:27 PM			Prep Date:	07/10/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		1450	20.0	1000	516	93.0	75	125			
Sodium		2360	20.0	1000	1400	95.8	75	125			

Sample ID:	0807056-05A MS	Batch ID:	30919	TestNo:	SW6020			Units:	mg/L		
SampType:	MS	Run ID:	ICP-MS3_080715A	Analysis Date:	07/15/08 02:32 PM			Prep Date:	07/10/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		507	20.0	5.00	516	-176	80	120			S
Sodium		1370	20.0	5.00	1400	-640	80	120			S

Sample ID:	0807056-05A MSD	Batch ID:	30919	TestNo:	SW6020			Units:	mg/L		
SampType:	MSD	Run ID:	ICP-MS3_080715A	Analysis Date:	07/15/08 02:37 PM			Prep Date:	07/10/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium		497	20.0	5.00	516	-368	80	120	1.91	15	S
Sodium		1340	20.0	5.00	1400	-1270	80	120	2.32	15	S

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0807049
Project: RRC Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_080715A

Sample ID:	ICV1-080715	Batch ID:	R38648	TestNo:	SW6020	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS3_080715A	Analysis Date:	07/15/08 12:19 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	2.44	0.100	2.50	0	97.8	90	110			
Sodium	2.43	0.100	2.50	0	97.3	90	110			

Sample ID:	CCV1-080715	Batch ID:	R38648	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080715A	Analysis Date:	07/15/08 01:29 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.75	0.100	5.00	0	94.9	90	110			
Sodium	4.76	0.100	5.00	0	95.1	90	110			

Sample ID:	CCV2-080715	Batch ID:	R38648	TestNo:	SW6020	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_080715A	Analysis Date:	07/15/08 02:43 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Calcium	4.79	0.100	5.00	0	95.8	90	110			
Sodium	4.78	0.100	5.00	0	95.5	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0807049
Project: RRC Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_080709A

Sample ID:	ICV-080709	Batch ID:	R38548	TestNo:	E300	Units:	mg/L
SampType:	ICV	Run ID:	IC2_080709A	Analysis Date:	07/09/08 12:12 PM	Prep Date:	07/09/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	26.5	1.00	25.00	0	106	90	110			
Sulfate	79.3	3.00	75.00	0	106	90	110			

Sample ID:	MB-080709	Batch ID:	R38548	TestNo:	E300	Units:	mg/L
SampType:	MBLK	Run ID:	IC2_080709A	Analysis Date:	07/09/08 12:26 PM	Prep Date:	07/09/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	ND	1.00								
Sulfate	ND	3.00								

Sample ID:	LCS-080709	Batch ID:	R38548	TestNo:	E300	Units:	mg/L
SampType:	LCS	Run ID:	IC2_080709A	Analysis Date:	07/09/08 12:41 PM	Prep Date:	07/09/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110			
Sulfate	30.9	3.00	30.00	0	103	90	110			

Sample ID:	LCSD-080709	Batch ID:	R38548	TestNo:	E300	Units:	mg/L
SampType:	LCSD	Run ID:	IC2_080709A	Analysis Date:	07/09/08 12:56 PM	Prep Date:	07/09/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110	0.0107	20	
Sulfate	30.8	3.00	30.00	0	103	90	110	0.443	20	

Sample ID:	CCV1-080709	Batch ID:	R38548	TestNo:	E300	Units:	mg/L
SampType:	CCV	Run ID:	IC2_080709A	Analysis Date:	07/09/08 03:09 PM	Prep Date:	07/09/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110			
Sulfate	30.9	3.00	30.00	0	103	90	110			

Sample ID:	CCV2-080709	Batch ID:	R38548	TestNo:	E300	Units:	mg/L
SampType:	CCV	Run ID:	IC2_080709A	Analysis Date:	07/09/08 06:11 PM	Prep Date:	07/09/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	10.4	1.00	10.00	0	104	90	110			
Sulfate	31.0	3.00	30.00	0	103	90	110			

Sample ID:	0807049-01CMS	Batch ID:	R38548	TestNo:	E300	Units:	mg/L
SampType:	MS	Run ID:	IC2_080709A	Analysis Date:	07/09/08 07:41 PM	Prep Date:	07/09/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	3510	100	1000	2496	101	90	110			

Sample ID:	0807049-01CMSD	Batch ID:	R38548	TestNo:	E300	Units:	mg/L
SampType:	MSD	Run ID:	IC2_080709A	Analysis Date:	07/09/08 07:56 PM	Prep Date:	07/09/08

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride	3490	100	1000	2496	99.6	90	110	0.383	20	

Sample ID:	0807053-01BMS	Batch ID:	R38548	TestNo:	E300	Units:	mg/L

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0807049
Project: RRC Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_080709A

SampType:	MS	Run ID:	IC2_080709A		Analysis Date:		07/09/08 08:10 PM		Prep Date:		07/09/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		113	3.00	30.00	80.83	109	90	110			

Sample ID:	0807053-01BMSD	Batch ID:	R38548		TestNo:		E300		Units:		mg/L
SampType:	MSD	Run ID:	IC2_080709A		Analysis Date:		07/09/08 08:25 PM		Prep Date:		07/09/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Sulfate		114	3.00	30.00	80.83	109	90	110	0.174	20	

Sample ID:	CCV3-080709	Batch ID:	R38548		TestNo:		E300		Units:		mg/L
SampType:	CCV	Run ID:	IC2_080709A		Analysis Date:		07/09/08 08:40 PM		Prep Date:		07/09/08
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Chloride		10.5	1.00	10.00	0	105	90	110			
Sulfate		31.4	3.00	30.00	0	105	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
DF	Dilution Factor	RL	Reporting Limit
J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
MDL	Method Detection Limit	J	Analyte detected between SDL and RL
ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0807049
Project: RRC Wendkirk BMP

ANALYTICAL QC SUMMARY REPORT

RunID: WC_080710E

Sample ID:	MB-080710	Batch ID:	TDS_W-7/10/08	TestNo:	M2540C			Units:	mg/L		
SampType:	MBLK	Run ID:	WC_080710E	Analysis Date:	07/10/08 03:00 PM			Prep Date:	07/10/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		ND	10.0								

Sample ID:	LCS-080710	Batch ID:	TDS_W-7/10/08	TestNo:	M2540C			Units:	mg/L		
SampType:	LCS	Run ID:	WC_080710E	Analysis Date:	07/10/08 03:00 PM			Prep Date:	07/10/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		771	10.0	745.6	0	103	90	113			

Sample ID:	0807049-07B DUP	Batch ID:	TDS_W-7/10/08	TestNo:	M2540C			Units:	mg/L		
SampType:	DUP	Run ID:	WC_080710E	Analysis Date:	07/10/08 03:00 PM			Prep Date:	07/10/08		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fi		9820	10.0	0	10540				7.07	5	R

Qualifiers:				
	B	Analyte detected in the associated Method Blank	R	RPD outside accepted control limits
	DF	Dilution Factor	RL	Reporting Limit
	J	Analyte detected between MDL and RL	S	Spike Recovery outside control limits
	MDL	Method Detection Limit	J	Analyte detected between SDL and RL
	ND	Not Detected at the Method Detection Limit	N	Parameter not NELAC certified

CLIENT: TRC Environmental Corp.
Work Order: 0807049
Project: RRC Wendkirk BMP

MQL SUMMARY REPORT

TestNo: E300 Analyte	MDL mg/L	MQL mg/L
Chloride	0.300	1.00
Sulfate	1.00	3.00
TestNo: SW6020	**MDL**	**MQL**
Analyte	**mg/L**	**mg/L**
Calcium	0.100	0.100
Sodium	0.100	0.100
TestNo: M2540C	**MDL**	**MQL**
Analyte	**mg/L**	**mg/L**
Total Dissolved Solids (Residue, Fi	10.0	10.0

Qualifiers:
MQL - Method Quantitation Limit as defined by TRRP
MDL - Method Detection Limit as defined by TRRP

APPENDIX B

ANALYTICAL DATA REVIEW/VALIDATION CHECKLIST

QA Data Evaluation Results
RRC – Wendkirk Oil Field

Background

Water samples were collected on July 7, 2008 as well as August 5 and 6, 2008. The samples were submitted to DHL Analytical in Round Rock, Texas for analysis. Results for the following methods are reported:

- Bromide, Chloride, and Sulfate by U.S. EPA Method 300.0
- Alkalinity by SM 2320 B
- Specific Conductance by SM 2510 B
- Total Dissolved Solids (TDS) by SM 2540 C
- pH by SM 4500-H+ B
- Calcium, Magnesium, Potassium, and Sodium by SW846 Method 6020

A review of quality control (QC) data associated with the samples was performed by TRC QA staff to ensure that the reported analytical results are valid, accurate, and sufficient to meet method quality objectives. Data were reviewed for compliance with the requirements given in *Investigations and Abatement of Produced Water Impacts and Seeps to Surface Water in the Upper Colorado River Basin Downstream of Spence Reservoir (Segment 1426) Quality Assurance Project Plan* (Railroad Commission of Texas, Oil and Gas Division, Revision 2, March 7, 2008)(the QAPP). Items reviewed during the data validation process included sample integrity, blank analyses, spike recoveries, and duplicate recoveries. Samples reviewed to prepare this evaluation are presented in Table 1.

The following is a discussion of the QC analyses performed with the site samples and any potential data limitations associated with the results of analyses.

Sample Integrity

All samples were adequately preserved and arrived at the laboratory in good condition. All preparatory steps were performed within method-defined holding times. All samples were analyzed within method-defined holding times.

Blank Analyses

Target analytes were not detected in reported blanks indicating that laboratory contamination did not impact analytical results.

Spike Recoveries

All reported LCS recoveries fall within QAPP-derived QC limits. These results are indicative adequate laboratory measurement control in the absence of potential matrix interferences at the time of sample analyses.

The following samples were analyzed as MS/MSD pairs in which all recoveries fall within QAPP-specified limits indicating that potential matrix interferences with target analyte recoveries are minimal:

- W-MW-02 for Bromide and Sulfate
- W-MW-7 for Chloride
- W-WW-4313302 for Chloride and Sulfate
- W-MW-06 for Bromide

Sample W-MW-02 was also analyzed as an MS/MSD pair for chloride. Both recoveries (83.4% and 84.9%) are below QAPP-defined control limits (90-110%). These results are indicative of a low bias for chloride in sample W-MW-02. This low bias may extend to other samples collected for this project.

Sample W-WW-081 was analyzed as an MS/MSD pair for calcium, magnesium, potassium, and sodium. Most recoveries are less than QAPP-defined; however, no data interpretation issues are indicated since concentrations in the un-spiked analysis of sample W-WW-081 are at least twenty-five times the spiking concentration.

Sample W-WW-4313302 was also analyzed as an MS/MSD pair for bromide. Recoveries (79.5% and 80.3%) are less than QAPP-defined limits (90-110%). These results are indicative of a low bias for bromide in sample W-WW-4313302. This low bias may extend to other samples collected for this project.

Duplicate Sample Analyses

All reported RPD values for LCS/LCSD pairs are within laboratory-derived limits indicating that the laboratory achieved adequate precision in the absence of potential matrix interferences at the time of sample analysis.

RPD values associated with MS/MSD analyses are within laboratory-specified limits indicating that the sample matrix has minimal impact, if any, on analytical precision.

Sample W-MW-10-D was collected as a field duplicate of sample W-MW-10. Calculated RPD values for detected analytes in these analyses are presented in Table 2. Adequate precision is exhibited for all detected analytes and data interpretation issues are not indicated.

Sample W-MW-8D was collected as a field duplicate of sample W-MW-8. Calculated RPD values for detected analytes in these analyses are presented in Table 3. The calculated RPD value for chloride is outside the expected range (i.e., RPD $\leq$ 20%). This result is indicative of excessive imprecision in reported chloride results for sample W-MW-8. This excessive variability may extend to other samples collected as part of this project.

Sample W-OW-01-D was collected as a field duplicate of sample W-OW-01. Calculated RPD values for detected analytes in these analyses are presented in Table 4. Adequate precision is exhibited for all detected analytes and data interpretation issues are not indicated.

The following samples were analyzed as laboratory duplicates for which all RPD values are within laboratory-specified control limits and no data interpretation issues are indicated:

- W-MW-17 and W-MW-11 for TDS
- W-WW-Milford-2 and W-MW-19 for pH
- W-MW-7 and W-MW-17 for Alkalinity
- W-MW-7, W-WW-081, and W-MW-19 for Specific Conductance

Conclusions

QC data associated with laboratory measurements indicate that data are defensible and that measurement data reliability is generally within expected limits of sampling and analytical error. The data user is advised that:

- Based on MS/MSD results, reported results for chloride in sample W-MW-02 and bromide in sample W-WW-4313302 may include a low bias. This low bias may extend to other samples collected for this project.
- Chloride results in sample W-MW-8 exhibit excessive imprecision based on field duplicate results. This excessive variability may extend to other samples collected as part of this project.

Table 1. Evaluated Samples

TRC ID	Collected	Matrix	DHL ID
W-MW-11	7/7/2008	Water	0807049-01
W-MW-10	7/7/2008	Water	0807049-02
W-MW-10-D	7/7/2008	Water	0807049-03
W-MW-05	7/7/2008	Water	0807049-04
W-OB-01	7/7/2008	Water	0807049-05
W-MW-12	7/8/2008	Water	0807049-06
W-MW-17	7/8/2008	Water	0807049-07
W-MW-02	8/5/2008	Water	0808039-01
W-MW-03	8/5/2008	Water	0808039-02
W-MW-01	8/5/2008	Water	0808039-03
W-MW-15	8/5/2008	Water	0808039-04
W-MW-16	8/5/2008	Water	0808039-05
W-MW-04	8/5/2008	Water	0808039-06
W-MW-11	8/5/2008	Water	0808039-07
W-MW-13	8/5/2008	Water	0808039-08
W-MW-9	8/5/2008	Water	0808039-09
W-WW-Milford-2	8/5/2008	Water	0808039-10
W-MW-8	8/5/2008	Water	0808039-11
W-MW-8D	8/5/2008	Water	0808039-12
W-MW-7	8/5/2008	Water	0808039-13
W-MW-14	8/6/2008	Water	0808056-01
W-WW-4313302	8/6/2008	Water	0808056-02
W-WW-081	8/6/2008	Water	0808056-03
W-MW-20	8/6/2008	Water	0808056-04
W-MW-17	8/6/2008	Water	0808056-05
W-MW-05	8/5/2008	Water	0808056-06
W-MW-10	8/5/2008	Water	0808056-07
W-MW-12	8/5/2008	Water	0808056-08
W-MW-06	8/6/2008	Water	0808056-09
W-MW-18	8/6/2008	Water	0808056-10
W-OW-01	8/6/2008	Water	0808056-11
W-OW-01-D	8/6/2008	Water	0808056-12
W-MW-19	8/6/2008	Water	0808056-13

Table 2. Calculated RPD Values for Field Duplicate Analyses of Sample W-MW-10

Analyte	Result	Duplicate Result	Units	RPD	Flag
Calcium	763	760	mg/L	0.39	
Sodium	8380	8520	mg/L	1.66	
Chloride	14300	14400	mg/L	0.70	
Sulfate	6500	6510	mg/L	0.15	
TDS	32300	32300	mg/L	0.0	

* RPD Greater than expected (i.e., RPD > 20)

Table 3. Calculated RPD Values for Field Duplicate Analyses of Sample W-MW-8

Analyte	Result	Duplicate Result	Units	RPD	Flag
Calcium	433	426	mg/L	1.63	
Magnesium	162	188	mg/L	15	
Potassium	73.4	84.6	mg/L	14	
Sodium	4560	4720	mg/L	3.45	
Bromide	10.9	10.9	mg/L	0.0	
Chloride	**4120**	**5530**	**mg/L**	**29**	*****
Sulfate	5480	6700	mg/L	20	
Alakalinity	384	423	mg/L	9.67	
pH	7.06	7.09	pH Units	0.42	
Specific Conductance	22300	27300	umhos/cm	20	
TDS	16100	19000	mg/L	17	

* RPD Greater than expected (i.e., RPD > 20)

Table 4. Calculated RPD Values for Field Duplicate Analyses of Sample W-OW-01

Analyte	Result	Duplicate Result	Units	RPD	Flag
Calcium	4090	4090	mg/L	0	
Magnesium	1080	1100	mg/L	1.83	
Potassium	61.7	61.6	mg/L	0.16	
Sodium	9430	9540	mg/L	1.16	
Bromide	163	164	mg/L	0.61	
Chloride	28900	28400	mg/L	1.75	
Sulfate	1420	1490	mg/L	4.81	
Alakalinity	288	286	mg/L	0.70	
pH	6.14	6.13	pH Units	0.16	
Specific Conductance	89500	85500	umhos/cm	4.57	
TDS	53900	54400	mg/L	0.92	

* RPD Greater than expected (i.e., RPD > 20)