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### Evaluation of Interim Measures Bloomfield Refinery

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January 2008

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### **Table of Contents**

#### **List of Sections**

Section 1	Introduction	.1
Section 2	Potentiometric Surface Evaluation	.3
Section 3	Evaluation of LNAPL Accumulations	.6
Section 4	Dissolved-Phase Concentration Evaluation	.7
Section 5	Review of Recovery Operations	.9
Section 6	Summary of Recommendations	1

### **List of Figures**

Figure 1	Site Map	. 1	4
----------	----------	-----	---

### List of Appendices

- Appendix A Graphs of Potentiometric Surface at Paired Wells
- Appendix B Graphs of Potentiometric Surfaces
- Appendix C Benzene Concentration Graphs
- Appendix D Data Tables



### Section 1 Introduction

JD Consulting, L.P. (JDC) completed an evaluation of the interim measures that Giant Refining Company has implemented near and along the bluff the runs along that northern edge of the Bloomfield Refinery. These interim measures include:

- A slurry wall that extends along the western and northern edge of the refinery and along the top of the bluff above the San Juan River for approximately 2,600 feet;
- A French drain that was constructed beneath the Hammond Ditch in 2002, when the ditch was lined with concrete; and
- Temporary catchment basins to collect ground water discharging from seeps along the face of the bluff.

JDC reviewed water level records and potentiometric surface maps; hydrocarbon thickness measurements and associated maps; available dissolved-phase concentration information; recovery records for the seep catchments (outfall records), recovery wells, and the French drain; and available hydrogeologic information (well logs, cross sections, etc.) for the area along the North Barrier Wall and near the seeps.

The following activities were identified that provide negligible benefit compared to the level of effort being expended and recommendations were developed to improve efficiencies:

- The catchment basins were installed as temporary measures to address the seeps prior to construction of the slurry wall and French drain. Since the installation of the slurry wall, the flow from the seeps has decreased but maintenance and safety issues continue with the catchment basins; and
- Recovery operations are conducted at the collection and observation wells that were installed along the slurry wall. Ground water (and any associated hydrocarbon) is recovered from the wells three times each week but there is little benefit from this activity.



### A slurry wall that extends along the western and





The remaining sections of this report are organized as follows:

- Section 2 provides an evaluation of the potentiometric surface data;
- Section 3 reviews the distribution of light non-aqueous phase liquid (LNAPL);
- Section 4 examines the dissolved-phase concentration data;
- Section 5 contains a review of the recovery operations; and
- Section 6 includes a summary and recommendations.

Graphs of the potentiometric surfaces and LNAPL measurements utilized for the evaluation are included in Appendices A and B. Appendix C contains graphs of benzene concentrations. The data tables, which were taken from previous report submittals and that were utilized for preparation of the graphs and the overall analyses, are included in Appendix D.







### Section 2 Potentiometric Surface Evaluation

An analysis of the potentiometric surface developed from water levels measured in well pairs (e.g., OW 3+85 and CW 3+85), which are located on opposite sides of the slurry wall, and long-term monitoring wells located near and distant to the slurry wall reveals the following observations:

- The slurry wall is acting as an effective hydraulic barrier;
- There is not a continued increase in water levels behind the slurry wall since the wall was installed; and
- The ground water recovery operations at the French drain, which is located on the up-gradient side of the slurry wall, are affecting local hydraulic gradients and reducing flow of ground water around the ends of the slurry wall.

In general, the potentiometric surface measured in collection wells, which are located on the refinery (up-gradient) side of the slurry wall, are approximately three feet higher than the potentiometric surface measured in observation wells located immediately across the slurry wall. Figure 1 shows the location of the site features, including the collection and observation wells and the slurry wall. The differences in the potentiometric surface elevations measured in the collection well and the adjacent down-gradient observation well pairs are also shown on the figure. A number of the observation wells were dry, while adjacent collection wells contained ground water. The difference in the potentiometric surface across the slurry wall decreases towards the east end of the wall, which may be reflective of the potential for ground water flow around the eastern end of the wall, as discussed below. Based on the potentiometric surface measurements, the slurry wall is an effective hydraulic barrier.

Graphs of the potentiometric surface at each of the well pairs along the slurry wall are included in Appendix A. It should be noted that the potentiometric surface measured in most of the wells had a relatively sharp rise in October 2005, but this was due to a resurvey of the well elevations rather than an actual change in the potentiometric surface. The water levels in the collection wells have remained stable since they were installed shortly after the slurry wall was completed. The stable potentiometric surface on the refinery side of the slurry wall indicates that there is no





significant "build up" of water behind the slurry wall that could threaten to breach the wall or increase flow around the ends of the wall.

To further evaluate the effect of the slurry wall across the site, the potentiometric surface in additional monitoring wells was evaluated. These wells were selected based on their upgradient and cross-gradient locations, and because they were all present before installation of the slurry wall. Three of the wells (MW-20, MW-40, and MW-41) are located within approximately 100 to 500 feet up-gradient of the slurry wall. Monitoring well MW-11 is located approximately 250 feet south of the southern end of the slurry wall and MW-8 is considered to be a background well for the refinery and it is located over 1,000 feet up-gradient of the slurry wall. As shown in the graph in Appendix B, the potentiometric surface in MW-20, which is the closest of the five wells, increased only slightly since the slurry wall was installed in April 2005. From 2003 through 2007, the potentiometric surface increased approximately one foot at MW-8, which is located near the up-gradient (eastern) end of the site, and it also increased at a similar rate at MW-11, which is cross-gradient to the slurry wall. The potentiometric surface increased approximately 1.5 feet at MW-40 and MW-41 during the same time period. The fact that the potentiometric surface increased in a similar manner at various locations across the site, including areas beyond the influence of the slurry wall, further indicates that water is not "building up" behind the slurry wall.

The potentiometric surface behind the slurry wall was also reviewed to determine if there is evidence of significant flow around the slurry wall. The potentiometric surface as measured on two occasions (October 2, 2006 and July 30, 2007) in individual collection wells located behind the slurry wall was plotted and is included in Appendix B. Based on these measurements, there does not appear to be a significant hydraulic gradient toward the end of the slurry wall. There is a slight outward gradient near the far east end of the slurry wall but overall there is a significant inward hydraulic gradient with the lowest measurement at collection well CW 8+10. The distribution of dissolved-phase constituents, which is discussed in Section 4, also indicates that there is not significant flow around the east end of the slurry wall.

A French drain was installed beneath the Hammond Ditch when it was lined with concrete in 2002 and the section of the drain that runs along the slurry wall recovers ground water at a rate of approximately 3.2 gallons per minute (gpm). The stable water level behind the slurry wall indicates that the withdrawal rate from the French drain is comparable to the quantity of ground





water flowing toward the slurry wall from up-gradient locations. In addition, the inward gradient along the length of the slurry wall also demonstrates the effectiveness of the French drain in intercepting ground water flowing from up-gradient locations toward the slurry wall.





### Section 3 Evaluation of LNAPL Accumulations

The light non-aqueous phase liquid (LNAPL) was evaluated to determine its distribution along and near the slurry wall and the change in thickness over time. A review of the data reveals the following:

- There is minimal LNAPL located along the slurry wall, with generally decreasing accumulations since installation of the slurry wall and French drain; and
- LNAPL is currently limited primarily to the observation wells located near the western end of the facility, in the general area of MW-47.

A plot of the measured LNAPL thickness for wells with significant accumulations is included on the graphs in Appendix A. The LNAPL was not plotted for several wells that had sporadic measured LNAPL thicknesses of one or two hundredths of a foot, most of which were not recent. LNAPL measurements immediately after installation of the collection and observation wells indicate that most of the LNAPL was located on the down-gradient side of the slurry wall in the observation wells. Only two collection wells (CW 8+45 & CW 11+15) had persistent LNAPL, but at a minimal thickness of 0.1 ft or less in CW 11+15 and generally less than 0.5 ft. in CW 8+45.

Since the wells were installed in 2005, LNAPL has been removed from the up-gradient side of the slurry wall such that measurable LNAPL is no longer detected in the collection wells. LNAPL was initially present in observation wells extending from the southwest end of the slurry wall (i.e., OW 0+60) to observation well OW 5+50, with an additional area of accumulation at OW 16+60. Over the last two years, recovery operations at the observation wells have successfully removed LNAPL from OW 0+60, OW 5+50, and OW 16+60. Persistent accumulations of LNAPL remain present at only observation wells OW 1+50 and OW 3+85 and the thickness of LNAPL in this area is generally less than 1.0 ft.







### Section 4 Dissolved-Phase Concentration Evaluation

Ground water sample analyses from the observation and collection wells of dissolved-phase constituents were reviewed to determine the effectiveness of the slurry wall and associated recovery operations. The followings observations are made:

- Dissolved-phase concentrations are significantly less in observation wells than in the corresponding collection wells, indicating the slurry wall is effectively controlling migration of chemicals of concern (COCs);
- The concentrations of dissolved-phase COCs are below detection limits or very low and decreasing in ground water samples collected from wells near the ends of the slurry wall, indicating the recovery operations at the French drain and nearby recovery wells are controlling COCs from migrating around the ends of the slurry wall; and
- Numerous collection well locations show decreasing concentrations of COCs behind the slurry wall, suggesting that the recovery operations are reducing concentrations of COCs up-gradient of the slurry wall.

Benzene was selected as the indicator parameter from the list of COCs detected in ground water because it is the most prevalent and toxic of the COCs and generally one of the more mobile COCs. Plots of the concentration of benzene measured from ground water samples collected at the paired observation and collection wells are included in Appendix C. A plot of the most recent benzene concentrations from ground water samples collected at the observation wells is also included in Appendix C. As shown on this plot, benzene was not detected in the eastern most four observation wells (OW 22+00, OW 23+10, OW 23+90, and OW 25+70) and was detected at very low concentrations below the Human Health Standard (0.01 mg/l) at observation well OW 19+50. Based on this plot of benzene concentrations, COCs are not migrating around the ends of the slurry wall. It also demonstrates there is no evidence that COCs are bypassing the slurry wall in this area, although the difference in the potentiometric surface between the collection wells and observation wells is less near the east end of the slurry wall than to the west.









Water samples were recently collected from the seeps, which occur along the bluff near the western portion of the property. The samples were collected on three occasions (October 9, 2007, November 8, 2007, and December 10, 2007) from the seeps, which have an active discharge of ground water. The samples are identified as Outfall #1, Outfall #6, Outfall #7, Outfall #8, and Outfall #9, and their locations are shown on Figure 1. The analytical results are presented in Appendix C. All of the analyses were non-detect for BTEX (benzene, ethylbenzene, toluene, and xylenes) constituents, with one exception. The October sample from Outfall #1 indicated very low concentrations of benzene and xylenes, 0.0029 mg/l and 0.0039 mg/l, respectively. Both subsequent samples from Outfall #1 were non-detect for all BTEX constituents. All of the detected results and non-detect quantitation limits are less than the potentially applicable ground water and surface water quality standards, which are shown on the Analytical Results Summary table for the bluff seeps/outfalls included in Appendix D.







There are various types of recovery operations currently being conducted at the Bloomfield Refinery with the goal of restoring ground water quality and preventing discharges of contaminated ground water to surface water. The following evaluation focused on actions being conducted near the slurry wall and the down-gradient seeps and resulted in the following observations/recommendations:

- The French drain and RW-1 are the predominant ground water recovery components in this area;
- Recovery from the collection wells is providing no benefit and recovery from the observation wells is providing marginal benefit; and
- Recovery volumes from the temporary catchment basins are reducing as the seeps are being successfully controlled by the slurry wall and on-going recovery from the seeps is providing no benefit.

Ground water is currently being extracted from the observation and collection wells three times a week via a vacuum truck. An estimated 10 gallons per week (0.001 gpm) are recovered from the 14 observation wells and an estimated 342 gallons per week (0.03 gpm) are recovered from the 15 collection wells. The recovery rate from the French drain, which runs beneath the Hammond ditch along the up-gradient side of the slurry wall, is 3.2 gpm. Pumping from RW-1, which is located near the western end of the slurry wall, averages 3.0 gpm. The recovery rates are summarized in the table below.

Recovery System/Well	Annual Flow Rate (gallons per year)	Flow Rate (gallons per minute)
Observation Wells	520	0.001
Collection Wells	17,800	0.03
Hammond Ditch French Drain	1,681,900	3.2
RW-1	1,576,800	3.0

Obviously, the recovery operations at the French drain and RW-1 are the predominant components and most effective ground water control measures. Recovery from the individual





collection wells, which are located immediately adjacent to the French drain, is providing no benefit. The saturated thickness at observation wells (that are not already dry) is only two feet on average. Recovery from the individual observation wells is providing minimal benefit and should be reduced to passive recovery from wells with measurable LNAPL (e.g., OW 1+50 & OW 3+85). The recovery volumes of water and LNAPL from individual wells should be more accurately recorded.

There are nine catchment basins located in the area of seeps, which are located along the bluff on the south side of the San Juan River. The seeps occur where ground water, which is flowing on top of the Nacimiento Formation, reaches the land surface near the outcrop of the formation. The catchment basins were installed as temporary measures when the seeps were first identified in 2004. The slurry wall was designed and installed in April 2005 as a permanent control measure to prevent further potential discharges of ground water to surface water and the generation of seeps along the bluff.

As discussed above, the slurry wall is an effective hydraulic barrier, as evidenced by numerous observations wells now being dry. The discharge from the seeps has also reduced significantly since installation of the slurry wall. The design of the catchment basins allows the accumulation of rain water in addition to ground water discharge. It appears that rainwater is currently the predominant contribution to water that accumulates in the catchment basins. During 2007, approximately 110,000 gallons of water were pumped from the catchment basins.

As the ground water that is down-gradient of the slurry wall continues to migrate toward the discharge points without significant recharge due to the presence of the slurry wall, the discharge rate from the seeps is anticipated to continue to decrease. It is possible that rainfall that occurs across the land surface that lies down-gradient of slurry wall may infiltrate and continue to provide minimal recharge to the seeps. However, due to the nature of rainfall in the local area (i.e., high rates of short duration) and steep slopes, most rainfall will runoff and not infiltrate to recharge the seeps. Recovery of the small volume of apparently clean water discharging at the seeps is not necessary or beneficial.







### Section 6 Summary of Recommendations

The slurry wall and associated French drain are providing hydraulic control to prevent COCs from migrating down-gradient toward potential discharge locations. These corrective measures have also eliminated most of the ground water flow that was sourcing the seeps along the river bluff. The current recovery operation at the collection wells is not providing any benefit, as the adjacent French drain is much more effective in capturing and removing contaminated ground water on the up-gradient side of the slurry wall. It is also doubtful if the recovery operations at the observation wells are providing significant benefit. The ground water and LNAPL volumes recovered from the observation wells are very low and the fact that several of the wells are dry and the saturated thickness is only two feet on average (where present) makes it impracticable to recover significant volumes from these wells. LNAPL removal could have a minimal benefit in a limited number of the observation wells and should be conducted using passive measures (e.g., an absorbent sock).

Ground water discharge from the seeps along the river bluff has decreased significantly since installation of the slurry wall. It now appears that only seeps #1, #6, #7, #8, and #9 have any actual discharge of ground water as opposed to apparent periodic accumulation of stormwater in the other catchment basins. Analyses of water samples, which discharge from the seeps, indicate that BTEX volatile organic constituents are non-detect. There does not appear to be any benefit from continuing recovery of the small volume of water discharging at the seeps. Recovery operations at the seeps should be discontinued and samples collected at seeps #1, #6, #7, #8, and #9 on a semi-annual basis to monitor for the presence of volatile and semi-volatile constituents of concern.

The following recommendations are offered:

- Measure water levels while recovery wells are in operation to allow an evaluation of the capture zone of the system and again after pumps have been removed and water levels have stabilized;
- Discontinue recovery from the collection wells and recover from only observation wells with LNAPL using passive measures (e.g., absorbent sock);
- Record recovery volumes (LNAPL and ground water);



- Continue to gauge all observation and collection wells on a bi-weekly basis;
- Discontinue recovery of water at the seep catchment basins and implement semi-annual monitoring at seeps #1, #6, #7, #8, and #9 on a semi-annual basis to monitor for the presence of volatile and semi-volatile constituents of concern; and
- Evaluate in-situ treatment technologies to address contamination that remains down-gradient of the slurry wall.



### Figures







### **Appendix A**

### **Graphs of Potentiometric Surface at Paired Wells**






































# **Appendix C**

# **Benzene Concentration Graphs**

























# **Appendix D**

# **Data Tables**

.



		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 0+60	3/14/2005	5498.62	NPP
CW 0+60	5/9/2005	5498.22	NPP
CW 0+60	5/12/2005	5498.16	NPP
CW 0+60	5/17/2005	5498.14	NPP
CW 0+60	5/19/2005	5498.11	NPP
CW 0+60	5/24/2005	5498.10	NPP
CW 0+60	5/26/2005	5498.08	NPP
CW 0+60	5/31/2005	5498.08	NPP
CW 0+60	6/2/2005	5498.07	NPP
CW 0+60	6/7/2005	5498.08	NPP
CW 0+60	6/9/2005	5498.05	NPP
CW 0+60	6/14/2005	5498.00	NPP
CW 0+60	6/16/2005	5498.02	NPP
CW 0+60	6/21/2005	5498.06	NPP
CW 0+60	6/23/2005	5498.01	NPP
CW 0+60	6/28/2005	5497.99	NPP
CW 0+60	7/7/2005	5498.00	NPP
CW 0+60	7/14/2005	5497.98	NPP
CW 0+60	7/19/2005	5497.97	NPP
CW 0+60	7/28/2005	5498.00	NPP
CW 0+60	8/2/2005	5498.00	NPP
CW 0+60	8/11/2005	5497.98	NPP
CW 0+60	8/23/2005	5498.18	NPP
CW 0+60	9/6/2005	5498.16	NPP -
CW 0+60	9/20/2005	5498.27	NPP
CW 0+60	10/4/2005	5498.81	NPP
CW 0+60	10/18/2005	5498.75	NPP
CW 0+60	11/1/2005	5499.36	NPP
CW 0+60	11/15/2005	5499.28	NPP
CW 0+60	11/29/2005	5500.82	NPP
CW 0+60	12/13/2005	5500.34	NPP
CW 0+60	12/27/2005	5500.21	NPP
CW 0+60	1/10/2006	5500.32	NPP
CW 0+60	1/24/2006	5498.69	NPP
CW 0+60	2/8/2006	5498.69	NPP
CW 0+60	2/16/2006	5498.53	NPP
CW 0+60	3/1/2006	5498.62	NPP
CW 0+60	3/20/2006	5498.67	NPP
CW 0+60	4/3/2006	5498.59	NPP
CW 0+60	5/3/2006	5498.74	NPP
CW 0+60	5/17/2006	5498.73	NPP
CW 0+60	5/30/2006	5498.76	NPP
CW 0+60	6/12/2006	5498.72	NPP
CW 0+60	6/26/2006	5498.72	NPP





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		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 0+60	7/12/2006	5498.93	NPP
CW 0+60	7/24/2006	5498.90	NPP
CW 0+60	8/7/2006	5498.82	NPP
CW 0+60	8/21/2006	5498.77	NPP
CW 0+60	9/5/2006	5498.84	NPP
CW 0+60	9/18/2006	5498.90	NPP
CW 0+60	10/2/2006	5498.91	NPP
CW 1+50	3/14/2005	5498.89	NPP
CW 1+50	5/9/2005	5497.75	NPP
CW 1+50	5/12/2005	5497.70	NPP
CW 1+50	5/17/2005	5497.66	NPP
CW 1+50	5/19/2005	5497.64	NPP
CW 1+50	5/24/2005	5497.64	NPP
CW 1+50	5/26/2005	5497.63	NPP
CW 1+50	5/31/2005	5497.61	NPP
CW 1+50	6/2/2005	5497.64	NPP
CW 1+50	6/7/2005	5497.63	NPP
CW 1+50	6/9/2005	5497.65	NPP
CW 1+50	6/14/2005	5497.61	NPP
CW 1+50	6/16/2005 -	5497.66	NPP
CW 1+50	6/21/2005	5497.65	NPP
CW 1+50	6/23/2005	5497.65	NPP
CW 1+50	6/28/2005	5497.59	NPP
CW 1+50	7/7/2005	5497.61	NPP
CW 1+50	7/14/2005	5497.59	NPP
CW 1+50	7/19/2005	5497.58	NPP
CW 1+50	7/28/2005	5497.59	NPP
CW 1+50	8/2/2005	5497.62	NPP
CW 1+50	8/11/2005	5497.59	NPP
CW 1+50	8/23/2005	5497.61	NPP
CW 1+50	9/6/2005	5497.62	NPP
CW 1+50	9/20/2005	5497.79	NPP
CW 1+50	10/4/2005	5498.96	NPP
CW 1+50	10/18/2005	5498.92	NPP
CW 1+50	11/1/2005	5499.02	NPP
CW 1+50	11/15/2005	5499.05	NPP
CW 1+50	11/29/2005	5499.09	0.02
CW 1+50	12/13/2005	5499.03	NPP
CW 1+50	12/27/2005	5499.01	0.02
CW 1+50	1/10/2006	5499.04	0.01
CW 1+50	1/24/2006	5498.99	NPP
CW 1+50	2/8/2006	5499.02	0.11
CW 1+50	2/16/2006	5498.80	NPP
CW 1+50	3/1/2006	5498.90	NPP



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		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 1+50	3/20/2006	5498.87	NPP
CW 1+50	4/3/2006	5498.84	NPP
CW 1+50	5/3/2006	5498.84	NPP
CW 1+50	5/17/2006	5498.85	NPP
CW 1+50	5/30/2006	5498.82	NPP
CW 1+50	6/12/2006	5498.79	NPP
CW 1+50	6/26/2006	5498.84	NPP
CW 1+50	7/12/2006	5498.92	NPP
CW 1+50	7/24/2006	5498.94	NPP
CW 1+50	8/7/2006	5498.92	NPP
CW 1+50	8/21/2006	5498.88	NPP
CW 1+50	9/5/2006	5498.94	NPP
CW 1+50	9/18/2006	5498.95	NPP
CW 1+50	10/2/2006	5498.97	NPP
CW 3+85	3/14/2005	5498.58	NPP
CW 3+85	5/9/2005	5503.57	7.41
CW 3+85	5/12/2005	5503.55	7.51
CW 3+85	5/17/2005	5503.55	7.48
CW 3+85	5/19/2005	5503.55	7.52
CW 3+85	5/24/2005	5503.54	7.56
CW 3+85	5/26/2005	5503.55	7.52
CW 3+85	5/31/2005	5503.55	7.52
CW 3+85	6/2/2005	5497.55	NPP
CW 3+85	6/7/2005	5497.54	NPP
CW 3+85	6/9/2005	5497.56	NPP
CW 3+85	6/14/2005	5497.64	NPP
CW 3+85	6/16/2005	5497.53	NPP
CW 3+85	6/21/2005	5497.53	NPP
CW 3+85	6/23/2005	5497.52	NPP
CW 3+85	6/28/2005	5497.53	NPP
CW 3+85	7/7/2005	5497.54	NPP
CW 3+85	7/14/2005	5497.52	NPP
CW 3+85	7/19/2005	5497.52	NPP
CW 3+85	7/28/2005	5497.52	NPP
CW 3+85	8/2/2005	5497.54	NPP
CW 3+85	8/11/2005	5497.52	NPP
CW 3+85	8/23/2005	5497.57	NPP
CW 3+85	9/6/2005	5497.57	NPP
CW 3+85	9/20/2005	5499.44	NPP
CW 3+85	10/4/2005	5498.44	NPP
CW 3+85	10/18/2005	5498.42	NPP
CW 3+85	11/1/2005	5492.52	0.01
CW 3+85	11/15/2005	5498.68	NPP
CW 3+85	1 11/29/2005	5498.80	0.02





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 3+85	12/13/2005	5498.82	0.02
CW 3+85	12/27/2005	5498.73	0.02
CW 3+85	1/10/2006	5498.78	0.02
CW 3+85	1/24/2006	5490.76	0.04
CW 3+85	2/8/2006	5498.74	0.19
CW 3+85	2/16/2006	5498.51	NPP
CW 3+85	3/1/2006	5498.56	NPP
CW 3+85	3/20/2006	5498.58	NPP
CW 3+85	4/3/2006	5498.48	NPP
CW 3+85	5/3/2006	5498.51	NPP
CW 3+85	5/17/2006	5498.48	NPP
CW 3+85	5/30/2006	5497.94	NPP
CW 3+85	6/12/2006	5498.46	NPP
CW 3+85	6/26/2006	5498.48	NPP
CW 3+85	7/12/2006	5498.41	NPP
CW 3+85	7/24/2006	5498.52	NPP
CW 3+85	8/7/2006	5498.48	NPP
CW 3+85	8/21/2006	5498.50	NPP
CW 3+85	9/5/2006	5498.51	NPP
CW 3+85	9/18/2006	5498.52	NPP
CW 3+85	10/2/2006	5498.53	NPP
CW 5+50	3/14/2005	5497.60	NPP
CW 5+50	5/9/2005	5496.74	NPP
CW 5+50	5/12/2005	5496.71	NPP
CW 5+50	5/17/2005	5496.74	NPP
CW 5+50	5/19/2005	5496.71	NPP
CW 5+50	5/24/2005	5496.73	NPP
CW 5+50	5/26/2005	5496.73	NPP
CW 5+50	5/31/2005	5496.73	NPP
CW 5+50	6/2/2005	5496.74	NPP
CW 5+50	6/7/2005	5496.73	NPP
CW 5+50	6/9/2005	5496.75	NPP
CW 5+50	6/14/2005	5496.73	NPP
CW 5+50	6/16/2005	5496.73	NPP
CW 5+50	6/21/2005	5496.72	NPP
CW 5+50	6/23/2005	5496.75	0.01
CW 5+50	6/28/2005	5496.76	0.01
CW 5+50	7/7/2005	5496.73	NPP
CW 5+50	7/14/2005	5496.76	0.02
CW 5+50	7/19/2005	5496.73	NPP
CW 5+50	7/28/2005	5496.74	NPP
CW 5+50	8/2/2005	5496.74	0.01
CW 5+50	8/11/2005	5496.76	0.02
CW 5+50	8/23/2005	5496.77	0.01







		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 5+50	9/6/2005	5496.76	0.01
CW 5+50	9/20/2005	5496.74	NPP
CW 5+50	10/4/2005	5497.59	NPP
CW 5+50	10/18/2005	5497.06	NPP
CW 5+50	11/1/2005	5497.62	NPP
CW 5+50	11/15/2005	5497.71	NPP
CW 5+50	11/29/2005	5497.73	0.02
CW 5+50	12/13/2005	5497.72	NPP
CW 5+50	12/27/2005	5497.70	0.01
CW 5+50	1/10/2006	5497.73	0.01
CW 5+50	1/24/2006	5497.64	NPP
CW 5+50	2/8/2006	5497.71	0.11
CW 5+50	2/16/2006	5497.53	NPP
CW 5+50	3/1/2006	5497.56	NPP
CW 5+50	3/20/2006	5497.57	NPP
CW 5+50	4/3/2006	5497.53	NPP
CW 5+50	5/3/2006	5497.57	NPP
CW 5+50	5/17/2006	5497.54	NPP
CW 5+50	5/30/2006	5497.57	NPP
CW 5+50	6/12/2006	5497.57	NPP
CW 5+50	6/26/2006	5497.52	NPP
CW 5+50	7/12/2006	5497.57	NPP
CW 5+50	7/24/2006	5497.57	NPP
CW 5+50	8/7/2006	5497.57	NPP
CW 5+50	8/21/2006	5497.53	NPP
CW 5+50	9/5/2006	5497.60	NPP
CW 5+50	9/18/2006	5497.57	NPP
CW 5+50	10/2/2006	5497.62	NPP
CW 6+70	3/14/2005	5497.13	NPP
CW 6+70	5/9/2005	5496.51	NPP
CW 6+70	5/12/2005	5496.40	NPP
CW 6+70	5/17/2005	5496.45	NPP
CW 6+70	5/19/2005	5496.41	NPP
CW 6+70	5/24/2005	5496.43	NPP
CW 6+70	5/26/2005	5496.42	NPP
CW 6+70	5/31/2005	5496.46	NPP
CW 6+70	6/2/2005	5496.44	NPP
CW 6+70	6/7/2005	5496.45	NPP
CW 6+70	6/9/2005	5496.45	NPP
CW 6+70	6/14/2005	5496.41	NPP
CW 6+70	6/16/2005	5496.42	0.01
CW 6+70	6/21/2005	5496.41	0.01
CW 6+70	6/23/2005	5496.42	0.01
CW 6+70	6/28/2005	5496.42	0.01





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 6+70	7/7/2005	5496.40	NPP
CW 6+70	7/14/2005	5496.41	0.01
CW 6+70	7/19/2005	5496.41	0.01
CW 6+70	7/28/2005	5496.41	NPP
CW 6+70	8/2/2005	5496.41	0.01
CW 6+70	8/11/2005	5496.41	0.01
CW 6+70	8/23/2005	5496.40	0.02
CW 6+70	9/6/2005	5496.36	NPP
CW 6+70	9/20/2005	5496.33	NPP
CW 6+70	10/4/2005	5497.14	NPP
CW 6+70	10/18/2005	5497.14	NPP
CW 6+70	11/1/2005	5497.19	NPP
CW 6+70	11/15/2005	5497.24	NPP
CW 6+70	11/29/2005	5496.30	0.05
CW 6+70	12/13/2005	5497.26	0.01
CW 6+70	12/27/2005	5497.23	0.02
CW 6+70	1/10/2006	5497.33	0.02
CW 6+70	1/24/2006	5497.16	NPP
CW 6+70	2/8/2006	5497.29	0.18
CW 6+70	2/16/2006	5497.13	NPP
CW 6+70	3/1/2006	5497.11	NPP
CW 6+70	3/20/2006	5497.18	NPP
CW 6+70	4/3/2006	5497.15	NPP
CW 6+70	5/3/2006	5497.20	NPP
CW 6+70	5/17/2006	5497.21	NPP
CW 6+70	5/30/2006	5497.23	NPP
CW 6+70	6/12/2006	5497.20	NPP
<u>CW 6+70</u>	6/26/2006	5497.22	NPP
<u>CW 6+70</u>	7/12/2006	5497.17	NPP
<u>CW 6+70</u>	7/24/2006	5497.17	NPP
<u>CW 6+70</u>	8/7/2006	5497.13	NPP
<u>CW 6+70</u>	8/21/2006	5497.17	NPP
<u>CW 6+70</u>	9/5/2006	5497.19	NPP
<u>CW 6+70</u>	9/18/2006	5497.15	NPP
<u>CW 6+70</u>	10/2/2006	5497.16	NPP
<u>CW 8+10</u>	5/14/2005	5496.59	NPP
<u>CW 8+10</u>	5/9/2005	5495.74	
<u>CW 8+10</u>	5/12/2005	5495.07	
CW 8+10	5/17/2005	5495.72	NPP
CW 8+10	5/19/2005	5495.64	NPP
<u>CW 8+10</u>	5/24/2005	5495.68	NPP
CW 8+10	5/26/2005	5495.66	NPP
CW 8+10	5/31/2005	5495.67	NPP NTT
CW 8+10	6/2/2005	5495.67	NPP



		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 8+10	6/7/2005	5495.66	NPP
CW 8+10	6/9/2005	5495.65	NPP
CW 8+10	6/14/2005	5495.62	NPP
CW 8+10	6/16/2005	5495.64	0.01
CW 8+10	6/21/2005	5495.63	0.01
CW 8+10	6/23/2005	5495.66	0.01
CW 8+10	7/7/2005	5495.62	NPP
CW 8+10	7/14/2005	5495.62	0.01
CW 8+10	7/19/2005	5495.60	NPP
CW 8+10	7/28/2005	5495.55	NPP
CW 8+10	8/2/2005	5495.65	0.01
CW 8+10	8/11/2005	5495.62	0.01
CW 8+10	8/23/2005	5495.65	NPP
CW 8+10	9/6/2005	5495.65	NPP
CW 8+10	9/20/2005	5495.59	NPP
CW 8+10	10/4/2005	5496.78	NPP
CW 8+10	10/18/2005	5496.83	NPP
CW 8+10	11/1/2005	5496.80	NPP
CW 8+10	11/15/2005	5496.88	NPP
CW 8+10	11/29/2005	5496.86	0.02
CW 8+10	12/13/2005	5496.86	0.01
CW 8+10	12/27/2005	5496.79	0.01
CW 8+10	1/10/2006	5496.64	NPP
CW 8+10	1/24/2006	5496.57	NPP
CW 8+10	2/8/2006	5496.59	NPP
CW 8+10	2/16/2006	5496.58	NPP
CW 8+10	3/1/2006	5496.59	NPP
CW 8+10	3/20/2006	5496.61	NPP
CW 8+10	4/3/2006	5496.59	NPP
CW 8+10	5/3/2006	5496.63	NPP
CW 8+10	5/17/2006	5496.65	NPP
CW 8+10	5/30/2006	5496.69	NPP
CW 8+10	6/12/2006	5496.66	NPP
CW 8+10	6/26/2006	5496.64	NPP
CW 8+10	7/12/2006	5496.69	NPP
CW 8+10	7/24/2006	5496.75	NPP
CW 8+10	8/7/2006	5496.71	NPP
CW 8+10	8/21/2006	5496.73	NPP
CW 8+10	9/5/2006	5496.69	NPP
<u>CW 8+10</u>	9/18/2006	5496.70	NPP
<u>CW 8+10</u>	10/2/2006	5496.71	NPP
CW 8+45	3/14/2005	5496.29	0.12
CW 8+45	5/9/2005	5496.03	0.46
CW 8+45	5/12/2005	5495.96	0.20





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	<b>Groundwater Elevation</b>	Thickness
		(ft amsl)	(ft)
CW 8+45	5/17/2005	5496.01	0.42
CW 8+45	5/19/2005	5495.92	0.28
CW 8+45	5/24/2005	5495.98	0.18
CW 8+45	5/26/2005	5496.00	0.33
CW 8+45	5/31/2005	5495.96	0.48
CW 8+45	6/2/2005	5495.99	0.09
CW 8+45	6/7/2005	5496.00	0.20
CW 8+45	6/9/2005	5495.94	0.29
CW 8+45	6/14/2005	5495.52	2.09
CW 8+45	6/16/2005	5495.94	0.04
CW 8+45	6/21/2005	5495.94	0.15
CW 8+45	6/23/2005	5495.97	0.02
CW 8+45	6/28/2005	5495.99	0.12
CW 8+45	7/7/2005	5496.02	0.05
CW 8+45	7/14/2005	5495.93	0.12
CW 8+45	7/19/2005	5495.92	0.13
CW 8+45	7/28/2005	5495.95	0.16
CW 8+45	8/2/2005	5495.95	0.11
CW 8+45	8/11/2005	5495.93	0.12
CW 8+45	8/23/2005	5495.96	0.31
CW 8+45	9/6/2005	5495.95	0.29
CW 8+45	9/20/2005	5495.84	0.04
CW 8+45	10/4/2005	.5496.57	0.14
CW 8+45	10/18/2005	5496.74	0.29
CW 8+45	11/1/2005	5496.59	0.11
CW 8+45	11/15/2005	5496.56	0.47
CW 8+45	11/29/2005	5496.61	0.23
CW 8+45	12/13/2005	5496.64	0.09
CW 8+45	12/27/2005	5496.62	0.08
CW 8+45	1/10/2006	5496.42	0.09
<u>CW 8+45</u>	1/24/2006	5496.34	0.07
CW 8+45	2/8/2006	5496.34	0.02
CW 8+45	2/16/2006	5496.35	0.02
<u>CW 8+45</u>	3/1/2006	5496.33	0.01
CW 8+45	3/20/2006	5496.39	0.02
CW 8+45	4/3/2006	5496.34	0.07
CW 8+45	5/3/2006	5496.45	NPP
CW 8+45	5/17/2006	5496.31	NPP
CW 8+45	5/30/2006	5496.39	NPP
CW 8+45	6/12/2006	5496.46	0.02
CW 8+45	6/26/2006	5496.39	0.03
CW 8+45	7/12/2006	5496.45	NPP
CW 8+45	7/24/2006	5496.49	0.02
CW 8+45	8/7/2006	5496.44	0.10







		Corrected	Separate Phase Hydrocarbon
Well ID	Date	<b>Groundwater Elevation</b>	Thickness
		(ft amsl)	(ft)
CW 8+45	8/21/2006	5496.42	0.10
CW 8+45	9/5/2006	5496.39	0.41
CW 8+45	9/18/2006	5496.40	0.07
CW 8+45	10/2/2006	5496.44	0.05
CW 11+15	3/14/2005	5498.31	NPP
CW 11+15	5/9/2005	5497.79	0.12
CW 11+15	5/12/2005	5497.72	0.04
CW 11+15	5/17/2005	5497.73	0.07
CW 11+15	5/19/2005	5497.66	0.10
CW 11+15	5/24/2005	5497.69	0.10
CW 11+15	5/26/2005	5497.74	0.10
CW 11+15	5/31/2005	5497.69	0.10
CW 11+15	6/2/2005	5497.72	0.08
CW 11+15	6/7/2005	5497.71	0.12
CW 11+15	6/9/2005	5497.71	0.11
CW 11+15	6/14/2005	5497.67	0.07
CW 11+15	6/16/2005	5497.69	0.05
CW 11+15	6/21/2005	5497.70	0.12
CW 11+15	6/23/2005	5497.72	0.07
CW 11+15	6/28/2005	5497.72	0.06
CW 11+15	7/7/2005	5497.71	0.12
CW 11+15	7/14/2005	5497.70	0.11
CW 11+15	7/19/2005	547.70	0.04
CW 11+15	7/28/2005	5497.71	0.04
CW 11+15	8/2/2005	5497.73	0.07
CW 11+15	8/11/2005	5497.70	0.11
CW 11+15	8/23/2005	5497.78	0.01
CW 11+15	9/6/2005	5497.77	0.01
CW 11+15	9/20/2005	5497.79	0.01
CW 11+15	10/4/2005	5498.10	NPP
CW 11+15	10/18/2005	5498.13	NPP
CW 11+15	11/1/2005	5498.26	NPP
CW 11+15	11/15/2005	5498.30	NPP
CW 11+15	11/29/2005	5497.40	NPP
<u>CW 11+15</u>	12/13/2005	5498.53	0.01
CW 11+15	12/27/2005	5498.48	0.01
CW 11+15	1/10/2006	5498.48	0.02
CW 11+15	1/24/2006	5498.40	NPP
CW 11+15	2/8/2006	5498.45	0.16
CW 11+15	2/16/2006	5498.21	NPP
<u>CW 11+15</u>	3/1/2006	5498.28	NPP
CW 11+15	3/20/2006	5498.29	NPP
CW 11+15	4/3/2006	5498.30	NPP
CW 11+15	5/3/2006	5498.28	NPP





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 11+15	5/17/2006	5498.26	NPP
CW 11+15	5/30/2006	5498.24	NPP
CW 11+15	6/12/2006	5498.39	NPP
CW 11+15	6/26/2006	5498.21	NPP
CW 11+15	7/12/2006	5498.23	NPP
CW 11+15	7/24/2006	5498.27	NPP
CW 11+15	8/7/2006	5498.21	NPP
CW 11+15	8/21/2006	5498.19	NPP
CW 11+15	9/5/2006	5498.19	NPP
CW 11+15	9/18/2006	5498.24	NPP
CW 11+15	10/2/2006	5498.22	NPP
CW 14+10	3/14/2005	5497.93	NPP
CW 14+10	5/9/2005	5497.14	NPP
CW 14+10	5/12/2005	5497.05	NPP
CW 14+10	5/17/2005	5497.12	NPP
CW 14+10	5/19/2005	5497.01	NPP
CW 14+10	5/24/2005	5497.03	NPP
CW 14+10	5/26/2005	5497.05	NPP
CW 14+10	5/31/2005	5497.05	NPP
CW 14+10	6/2/2005	5497.07	NPP
CW 14+10	6/7/2005	5497.06	NPP
CW 14+10	6/9/2005	5497.11	NPP
CW 14+10	6/14/2005	5497.02	NPP
CW 14+10	6/16/2005	5497.03	NPP
CW 14+10	6/21/2005	5497.02	NPP
CW 14+10	6/23/2005	5497.05	0.01
CW 14+10	6/28/2005	5497.11	NPP
CW 14+10	7/7/2005	5497.06	0.01
CW 14+10	7/14/2005	5497.04	0.01
CW 14+10	7/19/2005	5497.11	NPP
CW 14+10	7/28/2005	5497.09	NPP
CW 14+10	8/2/2005	5497.14	0.01
CW 14+10	8/11/2005	5497.04	0.01
CW 14+10	8/23/2005	5497.12	NPP
CW 14+10	9/6/2005	5497.15	NPP
CW 14+10	9/20/2005	5497.07	NPP
CW 14+10	10/4/2005	5497.92	NPP
CW 14+10	10/18/2005	5497.95	NPP
CW 14+10	11/1/2005	5497.98	NPP
CW 14+10	11/15/2005	5491.48	NPP
CW 14+10	11/29/2005	5497.90	0.01
CW 14+10	12/13/2005	5498.01	0.02
CW 14+10	12/27/2005	5497.99	0.01
CW 14+10	1/10/2006	5497.98	0.04





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 14+10	1/24/2006	5497.92	NPP
CW 14+10	2/8/2006	5497.97	0.11
CW 14+10	2/16/2006	5497.82	NPP
CW 14+10	3/1/2006	5497.90	NPP
CW 14+10	3/20/2006	5497.97	NPP
CW 14+10	4/3/2006	5497.92	NPP
CW 14+10	5/3/2006	5497.95	NPP
CW 14+10	5/17/2006	5497.96	NPP
CW 14+10	5/30/2006	5497.98	NPP
CW 14+10	6/12/2006	5497.94	NPP
CW 14+10	6/26/2006	5497.97	NPP
CW 14+10	7/12/2006	5497.98	NPP
CW 14+10	7/24/2006	5498.03	NPP
CW 14+10	8/7/2006	5497.92	NPP
CW 14+10	8/21/2006	5497.96	NPP
CW 14+10	9/5/2006	5497.91	NPP
CW 14+10	9/18/2006	5497.94	NPP
CW 14+10	10/2/2006	5497.94	NPP
CW 16+60	5/9/2005	5497.31	NPP
CW 16+60	5/12/2005	5497.26	NPP
CW 16+60	5/17/2005	5497.30	NPP
CW 16+60	5/19/2005	5497.27	NPP
CW 16+60	5/24/2005	5497.27	NPP
CW 16+60	5/26/2005	5497.26	NPP
CW 16+60	5/31/2005	5497.25	NPP
CW 16+60	6/2/2005	5497.25	NPP
CW 16+60	6/7/2005	5497.25	NPP
CW 16+60	6/9/2005	5497.26	NPP
CW 16+60	6/14/2005	5497.26	0.01
CW 16+60	6/16/2005	5497.27	0.01
CW 16+60	6/21/2005	5497.25	NPP
CW 16+60	6/23/2005	5497.25	0.01
CW 16+60	6/28/2005	5497.26	0.01
CW 16+60	7/7/2005	5497.25	0.01
CW 16+60	7/14/2005	5497.24	0.01
CW 16+60	7/19/2005	5497.28	0.01
CW 16+60	7/28/2005	5497.28	0.02
CW 16+60	8/2/2005	5497.32	0.01
CW 16+60	8/11/2005	5497.24	0.01
CW 16+60	8/23/2005	5497.26	NPP
CW 16+60	9/6/2005	5497.32	NPP
CW 16+60	9/20/2005	5497.35	NPP
CW 16+60	10/4/2005	5497.92	NPP
CW 16+60	10/18/2005	5498.05	NPP
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		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 16+60	11/1/2005	5498.05	NPP
CW 16+60	11/15/2005	5497.95	NPP
CW 16+60	11/29/2005	5497.95	NPP
CW 16+60	12/13/2005	5497.98	NPP
CW 16+60	12/27/2005	5497.95	NPP
CW 16+60	1/10/2006	5497.94	NPP
CW 16+60	1/24/2006	5497.94	NPP
CW 16+60	2/8/2006	5497.95	NPP
CW 16+60	2/16/2006	5497.85	NPP
CW 16+60	3/1/2006	5497.96	NPP
CW 16+60	3/14/2006	5497.96	NPP
CW 16+60	3/20/2006	5498.01	NPP
CW 16+60	4/3/2006	5497.97	NPP
CW 16+60	5/3/2006	5498.00	NPP
CW 16+60	5/17/2006	5498.02	NPP
CW 16+60	5/30/2006	5498.04	NPP
CW 16+60	6/12/2006	5498.01	NPP
CW 16+60	6/26/2006	5498.06	NPP
CW 16+60	7/12/2006	5498.02	NPP
CW 16+60	7/24/2006	5498.01	NPP
CW 16+60	8/7/2006	5498.00	NPP
CW 16+60	8/21/2006	5497.99	NPP
CW 16+60	9/5/2006	5498.01	NPP
CW 16+60	9/18/2006	5497.99	NPP
CW 16+60	10/2/2006	5498.00	NPP
CW 19+50	5/9/2005	5497.12	NPP
CW 19+50	5/12/2005	5497.09	NPP
CW 19+50	5/17/2005	5497.13	NPP
CW 19+50	5/19/2005	5497.04	NPP
CW 19+50	5/24/2005	5497.08	NPP
CW 19+50	5/26/2005	5497.07	NPP
CW 19+50	5/31/2005	5497.09	NPP
CW 19+50	6/2/2005	5497.10	NPP
CW 19+50	6/7/2005	5497.09	NPP
CW 19+50	6/9/2005	5497.12	NPP
CW 19+50	6/14/2005	5497.08	NPP
CW 19+50	6/16/2005	5497.06	NPP
CW 19+50	6/21/2005	5497.05	NPP
CW 19+50	6/23/2005	5497.08	NPP
CW 19+50	6/28/2005	5497.10	NPP
CW 19+50	7/7/2005	5497.08	NPP
CW 19+50	7/14/2005	5497.04	NPP
CW 19+50	7/19/2005	5497.15	NPP
CW 19+50	7/28/2005	5497.05	NPP





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 19+50	8/2/2005	5497.10	NPP
CW 19+50	8/11/2005	5497.04	NPP
CW 19+50	8/23/2005	5497.22	NPP
CW 19+50	9/6/2005	5497.18	NPP
CW 19+50	9/20/2005	5497.33	NPP
CW 19+50	10/4/2005	5498.15	NPP
CW 19+50	10/18/2005	54998.20	NPP
CW 19+50	11/1/2005	5498.25	NPP
CW 19+50	11/15/2005	5498.15	NPP
CW 19+50	12/13/2005	5498.17	0.02
CW 19+50	12/27/2005	54998.15	NPP
CW 19+50	1/10/2006	5498.16	NPP
CW 19+50	1/24/2006	54998.21	NPP
CW 19+50	2/8/2006	5498.18	NPP
CW 19+50	2/16/2006	54998.18	NPP
CW 19+50	3/1/2006	5498.25	NPP
CW 19+50	3/14/2006	5498.25	NPP
CW 19+50	3/20/2006	5498.29	NPP
CW 19+50	4/3/2006	5498.21	NPP
CW 19+50	5/3/2006	5498.26	NPP
CW 19+50	5/17/2006	5498.23	NPP
CW 19+50	5/30/2006	5498.29	NPP
CW 19+50	6/12/2006	5498.20	NPP
CW 19+50	6/26/2006	5498.31	NPP
CW 19+50	7/12/2006	5498.29	NPP
CW 19+50	7/24/2006	5498.02	NPP
CW 19+50	8/7/2006	5498.23	NPP
CW 19+50	8/21/2006	5498.23	NPP
<u>CW 19+50</u>	9/5/2006	5498.15	NPP
CW 19+50	9/18/2006	5498.20	NPP
<u>CW 19+50</u>	10/2/2006	5498.24	NPP
CW 22+00	5/9/2005	5498.07	NPP
<u>CW 22+00</u>	5/12/2005	5498.06	NPP
<u>CW 22+00</u>	5/17/2005	5498.06	NPP
CW 22+00	5/19/2005	5498.04	NPP
<u>Cw 22+00</u>	5/24/2005	5498.04	NPP
<u>CW 22+00</u>	5/20/2005	5498.04	NPP
<u>Cw 22+00</u>	5/31/2005	5498.27	NPP
<u>CW 22+00</u>	6/2/2005	5498.06	NPP
<u>CW 22+00</u>	6/ //2005	5498.04	NPP
<u>CW 22+00</u>	6/9/2005	5498.04	NPP
<u>CW 22+00</u>	6/14/2005	5498.06	NPP
<u>CW 22+00</u>	6/16/2005	5498.04	NPP
CW 22+00	6/21/2005	5497.94	NPP





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 22+00	6/23/2005	5498.07	0.01
CW 22+00	6/28/2005	5498.42	0.10
CW 22+00	7/7/2005	5498.32	0.10
CW 22+00	7/14/2005	5498.29	0.09
CW 22+00	7/19/2005	5498.07	NPP
CW 22+00	7/28/2005	5498.04	NPP
CW 22+00	8/2/2005	5498.04	NPP
CW 22+00	8/11/2005	5498.29	0.09
CW 22+00	8/23/2005	5498.07	NPP
CW 22+00	9/6/2005	5498.04	NPP
CW 22+00	9/20/2005	5498.10	NPP
CW 22+00	10/4/2005	5498.82	NPP
CW 22+00	10/18/2005	5498.86	NPP
CW 22+00	11/1/2005	5498.93	NPP
CW 22+00	11/15/2005	5498.92	NPP
CW 22+00	11/29/2005	5496.73	0.02
CW 22+00	12/13/2005	5498.96	0.01
CW 22+00	12/27/2005	5498.94	0.01
CW 22+00	1/10/2006	5498.91	NPP
CW 22+00	1/24/2006	5498.92	NPP
CW 22+00	2/8/2006	5498.90	NPP
CW 22+00	2/16/2006	5498.90	NPP
CW 22+00	3/1/2006	5498.94	NPP
CW 22+00	3/14/2006	5498.91	NPP
CW 22+00	3/20/2006	5498.91	NPP
CW 22+00	4/3/2006	5498.91	NPP
CW 22+00	5/3/2006	5498.92	NPP
CW 22+00	5/17/2006	5498.90	NPP
CW 22+00	5/30/2006	5498.92	NPP
CW 22+00	6/12/2006	5498.90	NPP
CW 22+00	6/26/2006	5498.92	NPP
CW 22+00	7/12/2006	5498.90	NPP
CW 22+00	7/24/2006	5498.91	NPP
CW 22+00	8/7/2006	5498.85	NPP
CW 22+00	8/21/2006	5498.90	NPP
CW 22+00	9/5/2006	5498.90	NPP
CW 22+00	9/18/2006	5498.81	NPP
CW 22+00	10/2/2006	5498.88	NPP
CW 23+10	5/9/2005	5498.53	NPP
CW 23+10	5/12/2005	5498.53	NPP
CW 23+10	5/17/2005	5498.53	NPP
CW 23+10	5/19/2005	5498.50	NPP
CW 23+10	5/24/2005	5498.52	NPP
CW 23+10	5/26/2005	5498.51	NPP



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		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 23+10	5/31/2005	5498.51	NPP
CW 23+10	6/2/2005	5498.54	NPP
CW 23+10	6/7/2005	5498.52	NPP
CW 23+10	6/9/2005	5498.53	NPP
CW 23+10	6/14/2005	5498.51	NPP
CW 23+10	6/16/2005	5498.51	NPP
CW 23+10	6/21/2005	5498.52	NPP
CW 23+10	6/23/2005	5498.52	NPP
CW 23+10	6/28/2005	5499.62	NPP
CW 23+10	7/7/2005	5498.53	NPP
CW 23+10	7/14/2005	5498.51	NPP
CW 23+10	7/19/2005	5498.52	NPP
CW 23+10	7/28/2005	5498.50	NPP
CW 23+10	8/2/2005	5498.54	NPP
CW 23+10	8/11/2005	5498.51	NPP
CW 23+10	8/23/2005	5498.53	NPP
CW 23+10	9/6/2005	5498.53	NPP
CW 23+10	9/20/2005	5498.59	NPP
CW 23+10	10/4/2005	5499.22	NPP
CW 23+10	10/18/2005	5499.21	NPP
CW 23+10	11/1/2005	5493.96	0.01
CW 23+10	11/15/2005	5499.31	NPP
CW 23+10	11/29/2005	5499.78	NPP
CW 23+10	12/13/2005	5499.34	NPP
CW 23+10	12/27/2005	5499.36	NPP
CW 23+10	1/10/2006	5499.35	NPP
CW 23+10	1/24/2006	5499.31	NPP
CW 23+10	2/8/2006	5499.33	NPP
CW 23+10	2/16/2006	5499.29	NPP
CW 23+10	3/1/2006	5499.32	NPP
CW 23+10	3/14/2006	5499.33	NPP
CW 23+10	3/20/2006	5499.28	NPP
CW 23+10	4/3/2006	5499.28	NPP
CW 23+10	5/3/2006	5499.31	NPP
CW 23+10	5/17/2006	5499.28	NPP
CW 23+10	5/30/2006	5499.30	NPP
CW 23+10	6/12/2006	5499.81	NPP
CW 23+10	6/26/2006	5499.29	0.23
CW 23+10	7/12/2006	5499.31	0.05
CW 23+10	7/24/2006	5499.25	NPP
CW 23+10	8/7/2006	5499.35	NPP
CW 23+10	8/21/2006	5499.26	NPP
CW 23+10	9/5/2006	5499.25	NPP
CW 23+10	9/18/2006	5499.25	NPP





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 23+10	10/2/2006	5499.26	NPP
CW 23+90	5/9/2005	5498.19	NPP
CW 23+90	5/12/2005	5498.19	NPP
CW 23+90	5/17/2005	5498.18	NPP
CW 23+90	5/19/2005	5498.17	NPP
CW 23+90	5/24/2005	5498.18	NPP
CW 23+90	5/26/2005	5498.18	NPP
CW 23+90	5/31/2005	5498.19	NPP
CW 23+90	6/2/2005	5498.23	NPP
CW 23+90	6/7/2005	5498.18	NPP
CW 23+90	6/9/2005	5498.18	NPP
CW 23+90	6/14/2005	5498.18	NPP
CW 23+90	6/16/2005	5498.18	NPP
CW 23+90	6/21/2005	5498.18	NPP
CW 23+90	6/23/2005	5498.19	NPP
CW 23+90	6/28/2005	5498.19	NPP
CW 23+90	7/7/2005	5505.60	9.28
CW 23+90	7/14/2005	5498.17	NPP
CW 23+90	7/19/2005	5498.21	NPP
CW 23+90	7/28/2005	5498.17	NPP
CW 23+90	8/2/2005	5498.19	NPP
CW 23+90	8/11/2005	5498.17	NPP
CW 23+90	8/23/2005	5498.25	NPP
CW 23+90	9/6/2005	5498.20	NPP
CW 23+90	9/20/2005	5498.28	NPP
CW 23+90	10/4/2005	5499.00	NPP
CW 23+90	10/18/2005	5498.98	NPP
CW 23+90	11/1/2005	5499.07	NPP
CW 23+90	11/15/2005	5499.05	NPP
CW 23+90	11/29/2005	5499.08	NPP
CW 23+90	12/13/2005	5499.07	NPP
CW 23+90	12/27/2005	5499.08	NPP
CW 23+90	1/10/2006	5499.05	NPP
CW 23+90	1/24/2006	5499.07	NPP
CW 23+90	2/8/2006	5499.04	NPP
CW 23+90	2/16/2006	5499.05	NPP
CW 23+90	3/1/2006	5499.08	NPP
CW 23+90	3/14/2006	5499.08	NPP
CW 23+90	3/20/2006	5499.08	NPP
CW 23+90	4/3/2006	5499.05	NPP
CW 23+90	5/3/2006	5499.06	NPP
CW 23+90	5/17/2006	5499.04	NPP
CW 23+90	5/30/2006	5499.09	NPP
CW 23+90	6/12/2006	5499.08	NPP







		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
CW 23+90	6/26/2006	5499.11	NPP
CW 23+90	7/12/2006	5499.15	NPP
CW 23+90	7/24/2006	5499.09	NPP
CW 23+90	8/7/2006	5499.06	NPP
CW 23+90	8/21/2006	5499.08	NPP
CW 23+90	9/5/2006	5499.10	NPP
CW 23+90	9/18/2006	5499.11	NPP
CW 23+90	10/2/2006	5499.11	NPP
CW 25+95	5/9/2005	5497.79	NPP
CW 25+95	5/12/2005	5497.79	NPP
CW 25+95	5/17/2005	5497.79	NPP
CW 25+95	5/19/2005	5497.79	NPP
CW 25+95	5/24/2005	5497.80	NPP
CW 25+95	5/26/2005	5497.79	NPP
CW 25+95	5/31/2005	5497.80	NPP .
CW 25+95	6/2/2005	5497.84	NPP
CW 25+95	6/7/2005	5497.80	NPP
CW 25+95	6/9/2005	5497.80	NPP
CW 25+95	6/14/2005	5497.80	NPP
CW 25+95	6/16/2005	5497.80	NPP
CW 25+95	6/21/2005	5497.80	NPP
CW 25+95	6/23/2005	5497.81	NPP
CW 25+95	6/28/2005	5497.81	NPP
CW 25+95	7/7/2005	5497.80	NPP
CW 25+95	7/14/2005	5497.79	NPP
CW 25+95	7/19/2005	5497.80	NPP
CW 25+95	7/28/2005	5497.79	NPP
CW 25+95	8/2/2005	5497.79	NPP
CW 25+95	8/11/2005	5497.79	NPP
CW 25+95	8/23/2005	5497.81	NPP
CW 25+95	9/6/2005	5497.81	NPP
CW 25+95	9/20/2005	5497.83	NPP
CW 25+95	10/4/2005	5498.67	NPP
CW 25+95	10/18/2005	5498.65	NPP
CW 25+95	11/1/2005	5498.67	NPP
CW 25+95	11/15/2005	5498.64	NPP
CW 25+95	11/29/2005	5498.66	NPP
CW 25+95	12/13/2005	5498.67	NPP
CW 25+95	12/27/2005	5498.67	NPP
CW 25+95	1/10/2006	5498.63	NPP
CW 25+95	1/24/2006	5498.66	NPP
CW 25+95	2/8/2006	5498.67	NPP
CW 25+95	2/16/2006	5498.66	NPP
CW 25+95	3/1/2006	5498.67	NPP





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	<b>Groundwater Elevation</b>	Thickness
		(ft amsl)	(ft)
CW 25+95	3/14/2006	5498.69	NPP
CW 25+95	3/20/2006	5498.67	NPP
CW 25+95	4/3/2006	5498.68	NPP
CW 25+95	5/3/2006	5498.71	NPP
CW 25+95	5/17/2006	5498.75	NPP
CW 25+95	5/30/2006	5498.71	NPP
CW 25+95	6/12/2006	5498.67	NPP
CW 25+95	6/26/2006	5498.71	NPP
CW 25+95	7/12/2006	5498.71	NPP
CW 25+95	7/24/2006	5498.68	NPP
CW 25+95	8/7/2006	5498.72	NPP
CW 25+95	8/21/2006	5498.75	NPP
CW 25+95	9/5/2006	5498.72	NPP
CW 25+95	9/18/2006	5498.69	NPP
CW 25+95	10/2/2006	5498.69	NPP
OW 0+60	5/9/2005	5495.00	0.42
OW 0+60	5/12/2005	5494.97	0.46
OW 0+60	5/17/2005	5495.22	1.05
OW 0+60	5/19/2005	5494.91	0.47
OW 0+60	5/24/2005	5494.87	0.50
OW 0+60	5/26/2005	5494.84	0.54
OW 0+60	5/31/2005	5494.80	0.69
OW 0+60	6/2/2005	5494.78	0.69
OW 0+60	6/7/2005	5494.80	0.68
OW 0+60	6/9/2005	5494.78	0.67
OW 0+60	6/14/2005	5494.65	0.56
OW 0+60	6/16/2005	5494.66	0.58
OW 0+60	6/21/2005	5494.65	0.55
OW 0+60	6/23/2005	5494.67	0.58
OW 0+60	6/28/2005	5494.66	0.57
OW 0+60	7/7/2005	5494.43	0.76
OW 0+60	7/14/2005	5494.45	0.68
OW 0+60	7/19/2005	5494.47	0.72
OW 0+60	7/28/2005	5493.77	0.01
OW 0+60	8/2/2005	5493.77	0.01
OW 0+60	8/11/2005	5494.45	0.68
OW 0+60	8/23/2005	5496.72	0.02
OW 0+60	9/6/2005	5493.73	0.05
OW 0+60	9/20/2005	5494.47	0.11
OW 0+60	10/4/2005	5495.11	0.04
OW 0+60	10/18/2005	5495.34	0.03
OW 0+60	11/1/2005	5496.78	NPP
OW. 0+60	11/15/2005	5496.45	NPP
OW 0+60	11/29/2005	5495.91	NPP





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
OW 0+60	12/13/2005	5495.96	NPP
OW 0+60	12/27/2005	5495.93	NPP
OW 0+60	1/10/2006	5496.43	NPP
OW 0+60	1/24/2006	5495.49	NPP
OW 0+60	2/8/2006	5495.43	NPP
OW 0+60	2/16/2006	5495.46	NPP
OW 0+60	3/1/2006	5494.99	NPP
OW 0+60	3/14/2006	5495.29	NPP
OW 0+60	3/20/2006	5495.23	NPP
OW 0+60	4/3/2006	5495.23	NPP
OW 0+60	5/3/2006	5495.33	NPP
OW 0+60	5/17/2006	5495.39	NPP
OW 0+60	5/30/2006	5495.41	NPP
OW 0+60	6/12/2006	5495.28	NPP
OW 0+60	6/26/2006	5495.23	NPP
OW 0+60	7/12/2006	5495.50	NPP
OW 0+60	7/24/2006	5495.67	NPP
OW 0+60	8/7/2006	5495.49	NPP
OW 0+60	8/21/2006	5495.39	NPP
OW 0+60	9/5/2006	5495.30	NPP
OW 0+60	9/18/2006	5495.21	NPP
OW 0+60	10/2/2006	5495.15	NPP
OW 1+50	5/9/2005	5492.03	0.02
OW 1+50	5/12/2005	5491.79	1.07
OW 1+50	5/17/2005	5491.47	0.48
OW 1+50	5/19/2005	5491.75	0.97
OW 1+50	5/24/2005	5491.69	1.02
OW 1+50	5/26/2005	5491.66	1.02
OW 1+50	5/31/2005	5491.61	1.01
OW 1+50	6/2/2005	5491.59	1.00
OW 1+50	6/7/2005	5491.64	1.04
OW 1+50	6/9/2005	5491.58	1.00
OW 1+50	6/14/2005	5491.43	0.96
OW 1+50	6/16/2005	5491.47	0.95
OW 1+50	6/21/2005	5491.46	0.93
OW 1+50	6/23/2005	5491.47	0.92
OW 1+50	6/28/2005	5491.45	0.93
OW 1+50	7/7/2005	5491.24	0.99
OW 1+50	7/14/2005	5491.22	0.99
OW 1+50	7/19/2005	5491.71	1.05
OW 1+50	7/28/2005	5491.22	0.02
OW 1+50	8/2/2005	5490.32	0.01
OW 1+50	8/11/2005	5491.22	0.99
OW 1+50	8/23/2005	5490.36	0.02





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
OW 1+50	9/6/2005	5490.33	0.03
OW 1+50	9/20/2005	5491.41	0.42
OW 1+50	10/4/2005	5494.72	0.05
OW 1+50	10/18/2005	5495.43	0.01
OW 1+50	11/1/2005	5496.49	NPP
OW 1+50	11/15/2005	5496.10	NPP
OW 1+50	11/29/2005	5495.87	NPP
OW 1+50	12/13/2005	5495.79	NPP
OW 1+50	12/27/2005	5495.75	NPP
OW 1+50	1/10/2006	5496.06	NPP
OW 1+50	1/24/2006	5496.06	NPP
OW 1+50	2/8/2006	5495.08	0.18
OW 1+50	2/16/2006	5495.02	0.13
OW 1+50	3/1/2006	5494.98	0.10
OW 1+50	3/14/2006	5494.88	0.07
OW 1+50	3/20/2006	5494.89	0.12
OW 1+50	4/3/2006	5494.79	0.02
OW 1+50	5/3/2006	5494.77	0.05
OW 1+50	5/17/2006	5494.76	0.05
OW 1+50	5/30/2006	5494.73	0.01
OW 1+50	6/12/2006	5494.66	0.05
OW 1+50	6/26/2006	5494.52	0.06
OW 1+50	7/12/2006	5495.11	NPP
OW 1+50	7/24/2006	5495.14	0.18
OW 1+50	8/7/2006	5494.89	0.05
OW 1+50	8/21/2006	5494.76	0.05
OW 1+50	9/5/2006	5494.74	0.25
OW 1+50	9/18/2006	5494.65	0.66
OW 1+50	10/2/2006	5494.63	0.76
OW 3+85	5/9/2005	5493.99	1.15
OW 3+85	5/12/2005	5493.99	1.15
OW 3+85	5/17/2005	5493.93	1.12
OW 3+85	5/19/2005	5493.91	1.15
OW 3+85	5/24/2005	5493.87	1.15
OW 3+85	5/26/2005	5493.84	1.14
OW 3+85	5/31/2005	5493.80	1.18
OW 3+85	6/2/2005	5493.78	1.16
OW 3+85	6/7/2005	5493.77	1.16
OW 3+85	6/9/2005	5493.76	1.16
OW 3+85	6/14/2005	5493.69	1.19
OW 3+85	6/16/2005	5493.68	1.18
OW 3+85	6/21/2005	5493.69	1.17
OW 3+85	6/23/2005	5493.61	1.20
OW 3+85	6/28/2005	5493.62	1.22

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		Corrected	Separate Phase Hydrocarbon
Weil ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
OW 3+85	7/7/2005	5493.61	1.20
OW 3+85	7/14/2005	5493.57	1.25
OW 3+85	7/19/2005	5493.58	1.23
OW 3+85	7/28/2005	5493.32	1.27
OW 3+85	8/2/2005	5493.56	0.03
OW 3+85	8/11/2005	5493.57	1.25
OW 3+85	8/23/2005	5493.36	0.06
OW 3+85	9/6/2005	5493.39	0.02
OW 3+85	9/20/2005	5493.62	0.63
OW 3+85	10/4/2005	5494.64	0.71
OW 3+85	10/18/2005	5495.15	0.02
OW 3+85	11/1/2005	5495.96	0.01
OW 3+85	11/15/2005	5495.71	0.01
OW 3+85	11/29/2005	5495.54	0.02
OW 3+85	12/13/2005	5496.37	0.01
OW 3+85	12/27/2005	5495.64	0.01
OW 3+85	1/10/2006	5495.67	0.01
OW 3+85	1/24/2006	5494.20	0.04
OW 3+85	2/8/2006	5494.91	0.02
OW 3+85	2/16/2006	5494.85	0.06
OW 3+85	3/1/2006	5494.70	NPP
OW 3+85	3/14/2006	5494.71	0.28
OW 3+85	3/20/2006	5494.68	0.60
OW 3+85	4/3/2006	5494.54	0.44
OW 3+85	5/3/2006	5494.56	0.19
OW 3+85	5/17/2006	5494.51	0.26
OW 3+85	5/30/2006	5494.65	1.30
OW 3+85	6/12/2006	5494.44	0.92
OW 3+85	6/26/2006	5494.36	1.01
OW 3+85	7/12/2006	5494.84	0.15
OW 3+85	7/24/2006	5494.81	0.61
OW 3+85	8/7/2006	5494.69	0.86
OW 3+85	8/21/2006	5494.55	0.75
OW 3+85	9/5/2006	5494.48	0.58
OW 3+85	9/18/2006	5494.44	0.80
OW 3+85	10/2/2006	5494.42	1.00
OW 5+50	5/9/2005	NWP	NPP
OW 5+50	5/12/2005	NWP	0.21
OW 5+50	5/17/2005	5494.69	1.14
OW 5+50	5/19/2005	NWP	0.69
OW 5+50	5/24/2005	NWP	0.82
OW 5+50	5/26/2005	NWP	0.85
OW 5+50	5/31/2005	NWP	0.87
OW 5+50	6/2/2005	NWP	0.87





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
OW 5+50	6/7/2005	NWP	0.88
OW 5+50	6/9/2005	NWP	0.87
OW 5+50	6/14/2005	NWP	0.81
OW 5+50	6/16/2005	NWP	0.8
OW 5+50	6/21/2005	NWP	0.79
OW 5+50	6/23/2005	NWP	0.78
OW 5+50	6/28/2005	NWP	0.77
OW 5+50	7/7/2005	NWP	0.72
OW 5+50	7/14/2005	NWP	0.71
OW 5+50	7/19/2005	NWP	0.72
OW 5+50	7/28/2005	NWP	0.65
OW 5+50	8/2/2005	5496.18	0.64
OW 5+50	8/11/2005	5496.24	0.71
OW 5+50	8/23/2005	5495.95	0.35
OW 5+50	10/4/2005	5496.93	0.35
OW 5+50	10/18/2005	5497.05	0.5
OW 5+50	11/1/2005	5494.80	0.84
OW 5+50	11/15/2005	5494.75	0.11
OW 5+50	11/29/2005	5494.12	0.01
OW 5+50	12/13/2005	5494.10	0.01
OW 5+50	12/27/2005	5494.08	0.02
OW 5+50	1/10/2006	5494.10	0.03
OW 5+50	1/24/2006	5494.29	NPP
OW 5+50	2/8/2006	5494.13	NPP
OW 5+50	2/16/2006	5494.10	NPP
OW 5+50	3/1/2006	5493.88	NPP
OW 5+50	3/14/2006	5493.99	NPP
OW 5+50	3/20/2006	5494.06	0.02
OW 5+50	4/3/2006	5494.00	NPP
OW 5+50	5/3/2006	5494.14	0.01
OW 5+50	5/17/2006	5494.10	NPP
OW 5+50	5/30/2006	NWP	NPP
OW 5+50	6/12/2006	5494.08	NPP
OW 5+50	6/26/2006	NWP	NPP
OW 5+50	7/12/2006	5493.95	0.02
OW 5+50	7/24/2006	5494.13	NPP
OW 5+50	8/7/2006	5494.12	NPP
OW 5+50	8/21/2006	5494.22	0.05
OW 5+50	9/5/2006	5494.34	0.03
OW 5+50	9/18/2006	5494.34	0.01
OW 5+50	10/2/2006	5494.31	0.05
OW 6+70	5/9/2005	NWP	NPP
OW 6+70	5/12/2005	NWP	NPP
OW 6+70	5/17/2005	NWP	NPP





		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
OW 6+70	5/19/2005	NWP	NPP
OW 6+70	5/24/2005	NWP	NPP
OW 6+70	5/26/2005	NWP	NPP
OW 6+70	5/31/2005	NWP	NPP
OW 6+70	6/2/2005	NWP	NPP
OW 6+70	6/7/2005	NWP	NPP
OW 6+70	6/9/2005	NWP	NPP
OW 6+70	6/14/2005	NWP	NPP
OW 6+70	6/16/2005	NWP	NPP
OW 6+70	6/21/2005	NWP	NPP
OW 6+70	6/23/2005	NWP	NPP
OW 6+70	6/28/2005	NWP	NPP
OW 6+70	7/7/2005	NWP	NPP
OW 6+70	7/14/2005	NWP	NPP
OW 6+70	7/19/2005	NWP	NPP
OW 6+70	7/28/2005	NWP	NPP
OW 6+70	8/2/2005	NWP	NPP
OW 6+70	8/11/2005	NWP	NPP
OW 6+70	8/23/2005	NWP	NPP
OW 6+70	9/6/2005	NWP	NPP
OW 6+70	9/20/2005	NWP	NPP
OW 6+70	10/4/2005	NWP	NPP
OW 6+70	10/18/2005	NWP	NPP
OW 6+70	11/1/2005	NWP	NPP
OW 6+70	11/15/2005	NWP	NPP
OW 6+70	11/29/2005	NWP	NPP
OW 6+70	12/13/2005	NWP	NPP
OW 6+70	12/27/2005	NWP	NPP
OW 6+70	1/10/2006	NWP	NPP
OW 6+70	1/24/2006	NWP	NPP
OW 6+70	2/8/2006	NWP	NPP
OW 6+70	2/16/2006	NWP	NPP
<u>OW 6+70</u>	3/1/2006	NWP	NPP
OW 6+70	3/14/2006	NWP	NPP
<u>OW 6+70</u>	3/20/2006	NWP	
OW 6+70	4/3/2006	NWP	NPP
<u> </u>	5/3/2006		
<u>UW 6+/0</u>	5/1//2006		NPP
<u> </u>	5/30/2006		NPP NTT
<u>OW 6+70</u>	0/12/2006	<u>NWP</u>	NPP
<u> </u>	0/20/2006	5491.31	NPP
<u> </u>	7/12/2006		
<u> </u>	//24/2006	NWP	NPP
UW 6+70	8///2006	NWP	NPP




	Corrected S		Separate Phase Hydrocarbon	
Well ID	Date	<b>Groundwater Elevation</b>	Thickness	
		(ft amsl)	(ft)	
OW 6+70	8/21/2006	NWP	NPP	
OW 6+70	9/5/2006	NWP	NPP	
OW 6+70	9/18/2006	NWP	NPP	
OW 6+70	10/2/2006	NWP	NPP	
OW 8+10	5/9/2005	NWP	NPP	
OW 8+10	5/12/2005	NWP	NPP	
OW 8+10	5/17/2005	NWP	NPP	
OW 8+10	5/19/2005	NWP	NPP	
OW 8+10	5/24/2005	NWP	NPP	
OW 8+10	5/26/2005	NWP	NPP	
OW 8+10	5/31/2005	NWP	NPP	
OW 8+10	6/2/2005	NWP	NPP	
OW 8+10	6/7/2005	NWP	NPP	
OW 8+10	6/9/2005	NWP	NPP	
OW 8+10	6/14/2005	NWP	NPP	
OW 8+10	6/16/2005	NWP	NPP	
OW 8+10	6/21/2005	NWP	NPP	
OW 8+10	6/23/2005	NWP	NPP	
OW 8+10	6/28/2005	NWP	NPP	
OW 8+10	7/7/2005	NWP	NPP	
OW 8+10	7/14/2005	NWP	NPP	
OW 8+10	7/19/2005	NWP	NPP	
OW 8+10	7/28/2005	NWP	NPP	
OW 8+10	8/2/2005	NWP	NPP	
OW 8+10	8/11/2005	NWP	NPP	
OW 8+10	8/23/2005	NWP	NPP	
OW 8+10	9/6/2005	NWP	NPP	
OW 8+10	9/20/2005	NWP	NPP	
OW 8+10	10/4/2005	NWP	NPP	
OW 8+10	10/18/2005	NWP	NPP	
OW 8+10	11/1/2005	NWP	NPP	
OW 8+10	11/15/2005	NWP	NPP	
OW 8+10	11/29/2005	NWP	NPP	
OW 8+10	12/13/2005	NWP	NPP	
OW 8+10	12/27/2005	NWP	NPP	
OW 8+10	1/10/2006	NWP	NPP	
OW 8+10	1/24/2006	NWP	NPP	
OW 8+10	2/8/2006	NWP	NPP	
OW 8+10	2/16/2006	NWP	NPP	
OW 8+10	3/1/2006	NWP	NPP	
OW 8+10	3/14/2006	NWP	NPP	
OW 8+10	3/20/2006	NWP	NPP	
OW 8+10	4/3/2006	NWP	NPP	
OW 8+10	5/3/2006	NWP	NPP	



<u> </u>		Corrected	Separate Phase Hydrocarbon
Well ID	Data	Croundwater Flevation	Thickness
	Date	(ft amel)	(ft)
OW 8+10	5/17/2006	NWP	NPP
OW 8+10	5/30/2006	NWP	NPP
OW 8+10	6/12/2006	NWP	NPP
OW 8+10	6/26/2006	NWP	NPP
OW 8+10	7/12/2006	NWP	NPP
OW 8+10	7/24/2006	NWP	NPP
OW 8+10	8/7/2006	NWP	NPP
OW 8+10	8/21/2006	NWP	NPP
OW 8+10	9/5/2006	NWP	NPP
OW 8+10	9/18/2006	NWP	NPP
OW 8+10	10/2/2006	NWP	NPP
OW 11+15	5/9/2005	5493.98	NPP
OW 11+15	5/12/2005	5493.93	NPP
<u>OW 11+15</u>	5/17/2005	5493.94	NPP
<u>OW 11+15</u>	5/19/2005	5493.91	NPP
OW 11+15	5/24/2005	5493.89	NPP
OW 11+15	5/26/2005	5493.88	NPP
OW 11+15	5/31/2005	5493.87	NPP
OW 11+15	6/2/2005	5493.88	NPP
OW 11+15	6/9/2005	5493.80	
OW 11+15	6/14/2005	5493.84	NIPP
OW 11+15	6/16/2005	5493.83	NPP
OW 11+15	6/21/2005	5493.82	NPP
OW 11+15	6/23/2005	5493.81	NPP
OW 11+15	6/28/2005	5493.81	NPP
OW 11+15	7/7/2005	5493.80	NPP
OW 11+15	7/14/2005	5493.78	NPP
OW 11+15	7/19/2005	5493.80	NPP
OW 11+15	7/28/2005	5493.76	NPP
OW 11+15	8/2/2005	5493.78	NPP
OW 11+15	8/11/2005	5493.78	NPP
OW 11+15	8/23/2005	5493.76	NPP
OW 11+15	9/6/2005	5493.78	NPP
OW 11+15	9/20/2005	5494.06	0.01
<u>OW 11+15</u>	10/4/2005	5495.29	NPP
<u>OW 11+15</u>	10/18/2005	5495.38	NPP
OW 11+15	11/1/2005	5495.69	
OW 11+15	11/15/2005	5495.30	
OW 11+15	11/29/2005	5495.38	0.01
OW 11+15	12/13/2005	5495.31	0.02
OW 11+15	1/10/2006	5495.32	0.03
OW 11+15	1/10/2000	5495.30	
UW 11+15	1/24/2000	5495.04	NPP







	Corrected		Separate Phase Hydrocarbon		
Well ID	Date	<b>Groundwater Elevation</b>	Thickness		
		(ft amsl)	(ft)		
OW 11+15	2/8/2006	5493.75	NPP		
OW 11+15	2/16/2006	5495.52	NPP		
OW 11+15	3/1/2006	5494.96	0.02		
OW 11+15	3/14/2006	5494.86	NPP		
OW 11+15	3/20/2006	5494.88	NPP		
OW 11+15	4/3/2006	5494.81	NPP		
OW 11+15	5/3/2006	5494.89	0.01		
OW 11+15	5/17/2006	5493.83	NPP		
OW 11+15	5/30/2006	5494.86	NPP		
OW 11+15	6/12/2006	5494.86	NPP		
OW 11+15	6/26/2006	5494.82	NPP		
OW 11+15	7/12/2006	5494.89	NPP		
OW 11+15	7/24/2006	5494.93	NPP		
OW 11+15	8/7/2006	5494.87	NPP		
OW 11+15	8/21/2006	5494.86	NPP		
OW 11+15	9/5/2006	5494.96	NPP		
OW 11+15	9/18/2006	5494.96	NPP		
OW 11+15	10/2/2006	5494.91	NPP		
OW 14+10	5/9/2005	5494.70	NPP		
OW 14+10	5/12/2005	5494.65	NPP		
OW 14+10	5/17/2005	5494.65	NPP		
OW 14+10	5/19/2005	5494.63	NPP		
OW 14+10	5/24/2005	5494.62	NPP		
OW 14+10	5/26/2005	5494.65	NPP		
OW 14+10	5/31/2005	5494.59	0.01		
OW 14+10	6/2/2005	5494.58	0.01		
OW 14+10	6/7/2005	5494.59	0.01		
OW 14+10	6/9/2005	5494.61	0.01		
OW 14+10	6/14/2005	5494.51	0.03		
OW 14+10	6/16/2005	5494.51	0.03		
OW 14+10	6/21/2005	5494.52	0.04		
OW 14+10	6/23/2005	5494.44	0.04		
OW 14+10	6/28/2005	5494.43	0.09		
OW 14+10	7/7/2005	5494.42	0.08		
OW 14+10	7/14/2005	5494.42	0.07		
OW 14+10	7/19/2005	5494.42	0.05		
OW 14+10	7/28/2005	5494.31	0.20		
OW 14+10	8/2/2005	5494.31	0.30		
OW 14+10	8/11/2005	5494.42	0.07		
OW 14+10	8/23/2005	5494.28	0.22		
OW 14+10	9/6/2005	5494.27	0.22		
OW 14+10	10/4/2005	5495.34	0.02		
OW 14+10	10/18/2005	5495.40	0.03		
OW 14+10	11/1/2005	5495.26	NPP		





<b></b>		Corrected	Separate Phase Hydrocarbon	
Well ID	Date	Groundwater Elevation	Thickness	
		(ft amsl)	(ft)	
OW 14+10	11/15/2005	5495.23	NPP	
OW 14+10	11/29/2005	NWP	NPP	
OW 14+10	12/13/2005	NWP	NPP	
OW 14+10	12/27/2005	NWP	NPP	
OW 14+10	1/10/2006	NWP	NPP	
OW 14+10	1/24/2006	NWP	NPP	
OW 14+10	2/8/2006.	NWP	NPP	
OW 14+10	2/16/2006	NWP	NPP	
OW 14+10	3/1/2006	NWP	NPP	
OW 14+10	3/14/2006	NWP	NPP	
OW 14+10	3/20/2006	NWP	NPP	
OW 14+10	4/3/2006	NWP	NPP	
OW 14+10	5/3/2006	NWP	NPP	
OW 14+10	5/17/2006	NWP	NPP	
OW 14+10	5/30/2006	NWP	NPP	
OW 14+10	6/12/2006	NWP	NPP	
OW 14+10	6/26/2006	NWP	NPP	
OW 14+10	7/12/2006	NWP	NPP	
OW 14+10	7/24/2006	NWP	NPP	
OW 14+10	8/7/2006	NWP	NPP	
OW 14+10	8/21/2006	NWP	NPP	
OW 14+10	9/5/2006	NWP	NPP	
OW 14+10	9/18/2006	NWP	NPP	
OW 14+10	10/2/2006	NWP	NPP	
OW 16+60	5/9/2005	5494.94	0.86	
OW 16+60	5/12/2005	5494.95	0.88	
OW 16+60	5/17/2005	5494.86	0.77	
OW 16+60	5/19/2005	5494.85	0.81	
OW 16+60	5/24/2005	5494.83	0.72	
OW 16+60	5/26/2005	5494.85	0.76	
OW 16+60	5/31/2005	5494.79	0.63	
OW 16+60	6/2/2005	5494.77	0.72	
OW 16+60	6/7/2005	5494.80	0.64	
OW 16+60	6/9/2005	5494.77	0.68	
OW 16+60	6/14/2005	5494.67	0.73	
OW 16+60	6/16/2005	5494.68	0.75	
OW 16+60	6/21/2005	5494.67	0.72	
OW 16+60	6/23/2005	5494.61	0.69	
OW 16+60	6/28/2005	5494.50	0.51	
OW 16+60	7/7/2005	5494.51	0.53	
OW 16+60	7/14/2005	5494.50	0.54	
OW 16+60	7/19/2005	5494.50	0.51	
OW 16+60	7/28/2005	5494.45	0.56	
OW 16+60	8/2/2005	5494.42	0.55	





		Corrected	Separate Phase Hydrocarbon	
Well ID	Date	Groundwater Elevation	Thickness	
		(ft amsl)	(ft)	
OW 16+60	8/11/2005	5494.50	0.54	
OW 16+60	8/23/2005	5494.40	0.47	
OW 16+60	9/6/2005	5494.39	0.45	
OW 16+60	9/20/2005	5494.37	0.45	
OW 16+60	10/4/2005	5495.82	0.45	
OW 16+60	10/18/2005	5495.87	0.16	
OW 16+60	11/1/2005	5495.98	0.27	
OW 16+60	11/15/2005	5494.97	0.21	
OW 16+60	11/29/2005	5495.92	0.01	
OW 16+60	12/13/2005	5495.86	0.01	
OW 16+60	12/27/2005	5495.90	0.01	
OW 16+60	1/10/2006	5495.80	0.01	
OW 16+60	1/24/2006	5495.78	0.38	
OW 16+60	2/8/2006	5495.86	0.32	
OW 16+60	2/16/2006	5495.93	0.03	
OW 16+60	3/1/2006	5495.80	0.10	
OW 16+60	3/14/2006	5495.92	0.02	
OW 16+60	3/20/2006	5496.00	0.04	
OW 16+60	4/3/2006	5496.03	0.02	
OW 16+60	5/3/2006	5495.97	0.01	
OW 16+60	5/17/2006	5495.93	0.06	
OW 16+60	5/30/2006	5495.83	0.01	
OW 16+60	6/12/2006	5495.80	0.16	
OW 16+60	6/26/2006	5495.75	0.39	
OW 16+60	7/12/2006	5495.01	3.65	
OW 16+60	7/24/2006	5495.73	0.20	
OW 16+60	8/7/2006	5495.70	0.22	
OW 16+60	8/21/2006	5495.64	0.25	
OW 16+60	9/5/2006	5495.69	0.25	
OW 16+60	9/18/2006	5495.69	0.26	
<u>OW 16+60</u>	10/2/2006	5495.73	0.24	
<u>OW 19+50</u>	5/9/2005	5495.64	NPP	
OW 19+50	5/12/2005	5494.98	NPP	
OW 19+50	5/17/2005	5494.27	NPP	
OW 19+50	5/19/2005	5494.53	NPP	
<u>UW 19+50</u>	5/24/2005	5494.88		
<u>OW 19+50</u>	5/26/2005	5494.97	NPP NTTD	
<u>OW 19+50</u>	5/31/2005	5495.11	NPP	
<u>OW 19+50</u>	6/2/2005	5495.14	NPP	
<u>UW 19+50</u>	6/ //2005	5495.15	NPP	
<u>OW 19+50</u>	6/9/2005	5495.14	NPP	
<u>OW 19+50</u>	6/14/2005	5495.08	NPP	
OW 19+50	6/16/2005	5495.06	NPP	
OW 19+50	6/21/2005	5495.07	NPP	

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	T	Corrected	Separate Phase Hydrocarbon		
Well ID	Date	Groundwater Elevation	Thickness		
	Date	(ft amsl)	(ft)		
OW 19+50	6/23/2005	5494.97	NPP		
OW 19+50	6/28/2005	5494.94	NPP		
OW 19+50	7/7/2005	5494.95	NPP		
OW 19+50	7/14/2005	5494.91	NPP		
OW 19+50	7/19/2005	5494.68	NPP		
OW 19+50	7/28/2005	5494.81	NPP		
OW 19+50	8/2/2005	5494.66	NPP		
OW 19+50	8/11/2005	5494.91	NPP		
OW 19+50	8/23/2005	5493.96	NPP		
OW 19+50	9/6/2005	5493.95	NPP		
OW 19+50	9/20/2005	5494.18	NPP		
OW 19+50	10/4/2005	5495.24	NPP		
OW 19+50	10/18/2005	5495.36	NPP		
OW 19+50	11/1/2005	5495.64	NPP		
OW 19+50	11/15/2005	5495.56	NPP		
OW 19+50	12/13/2005	5495.15	NPP		
OW 19+50	12/27/2005	5495.17	NPP		
OW 19+50	1/10/2006	5495.47	NPP		
OW 19+50	1/24/2006	5495.77	NPP		
OW 19+50	2/8/2006	5495.73	NPP		
OW 19+50	2/16/2006	5495.89	NPP		
OW 19+50	3/1/2006	5495.12	NPP		
OW 19+50	3/14/2006	5495.05	NPP		
OW 19+50	3/20/2006	5495.55	NPP		
OW 19+50	4/3/2006	5495.38	NPP		
<u>OW 19+50</u>	5/3/2006	5495.20	0.01		
<u>OW 19+50</u>	5/17/2006	5495.46	NPP		
<u>OW 19+50</u>	5/30/2006	5495.32			
OW 19+50	6/12/2006	5495.29	NPP		
OW 19+50	6/26/2006				
OW 19+50	7/12/2006				
OW 19+50	8/7/2006				
OW 19+50	8/21/2006	5495.21	0.20		
OW 19+50	9/5/2006	NWP	NPP		
OW 19+50	9/18/2006	NWP	NPP		
OW 19+50	10/2/2006	NWP	NIPP		
OW 22+00	5/9/2005	5495.85	NPP		
OW 22+00	5/12/2005	5495.80	NPP		
OW 22+00	5/17/2005	5495 74	NPP		
OW 22+00	5/19/2005	5495 75	NPP		
OW 22+00	5/24/2005	5495 74	NPD		
OW 22+00	5/26/2005	5495 72	NPP		
OW 22+00	5/31/2005	5495 70	NPP		
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		Corrected	Separate Phase Hydrocarbon		
Well ID	Date	Groundwater Elevation	Thickness		
1		(ft amsl)	(ft)		
OW 22+00	6/2/2005	5495.69	NPP		
OW 22+00	6/7/2005	5495.68	NPP		
OW 22+00	6/9/2005	5495.68	NPP		
OW 22+00	6/14/2005	5495.36	NPP		
OW 22+00	6/16/2005	5495.33	NPP		
OW 22+00	6/21/2005	5495.27	NPP		
OW 22+00	6/23/2005	5495.33	NPP		
OW 22+00	6/28/2005	5495.21	NPP		
OW 22+00	7/7/2005	5495.25	NPP		
OW 22+00	7/14/2005	5495.18	NPP		
OW 22+00	7/19/2005	5494.79	NPP		
OW 22+00	7/28/2005	5494.78	NPP		
OW 22+00	8/2/2005	5494.75	NPP		
OW 22+00	8/11/2005	5495.18	NPP		
OW 22+00	8/23/2005	5494.76	NPP		
OW 22+00	9/6/2005	5494.76	NPP		
OW 22+00	9/20/2005	5495.20	0.10		
OW 22+00	10/4/2005	5495.69	NPP		
OW 22+00	10/18/2005	5495.60	NPP		
OW 22+00	11/1/2005	5496.46	NPP		
OW 22+00	11/15/2005	5496.29	0.01		
OW 22+00	11/29/2005	5495.60	0.02		
OW 22+00	12/13/2005	5495.73	0.02		
OW 22+00	12/27/2005	5495.69	0.03		
OW 22+00	1/10/2006	5495.67	0.02		
OW 22+00	1/24/2006	5495.60	NPP		
OW 22+00	2/8/2006	5495.64	0.15		
OW 22+00	2/16/2006	5495.58	NPP		
OW 22+00	3/1/2006	5495.49	NPP		
OW 22+00	3/14/2006	5495.43	NPP		
OW 22+00	3/20/2006	5495.44	NPP		
OW 22+00	4/3/2006	5495.42	NPP		
OW 22+00	5/3/2006	5495.36	0.02		
<u>OW 22+00</u>	5/1//2006	5495.20	NPP		
<u>OW 22+00</u>	5/30/2006	5495.10	NPP		
OW 22+00	0/12/2006	5494.92			
OW 22+00	0/20/2006	5494.82	NYY NTT		
OW 22+00	7/12/2006	5495.17	NPP		
OW 22+00	//24/2006	5495.02			
OW 22+00	8/7/2006	5494.83			
OW 22+00	8/21/2006	5494.70			
<u> </u>	9/5/2006	5494.92	NPP NPP		
OW 22+00	9/18/2006	5494.92			
OW 22+00	10/2/2006	5494.95	NPP		









	Corrected		Separate Phase Hydrocarbon		
Well ID	Date	Groundwater Elevation	Thickness		
		(ft amsl)	(ft)		
OW 23+10	5/9/2005	5496.93	NPP		
OW 23+10	5/12/2005	5496.93	NPP		
OW 23+10	5/17/2005	5496.88	NPP		
OW 23+10	5/19/2005	5496.89	NPP		
OW 23+10	5/24/2005	5496.89	NPP		
OW 23+10	5/26/2005	5496.90	NPP		
OW 23+10	5/31/2005	5496.90	NPP		
OW 23+10	6/2/2005	5496.90	NPP		
OW 23+10	6/7/2005	5496.89	NPP		
OW 23+10	6/9/2005	5496.88	NPP		
OW 23+10	6/14/2005	5496.87	NPP		
OW 23+10	6/16/2005	5496.88	NPP		
OW 23+10	6/21/2005	5496.85	NPP		
OW 23+10	6/23/2005	5496.88	NPP		
OW 23+10	6/28/2005	5496.87	NPP		
OW 23+10	7/7/2005	5496.86	NPP		
OW 23+10	7/14/2005	5496.81	NPP		
OW 23+10	7/19/2005	5496.85	NPP		
OW 23+10	7/28/2005	5496.80	NPP		
OW 23+10	8/2/2005	5496.81	NPP		
OW 23+10	8/11/2005	5496.81	NPP		
OW 23+10	8/23/2005	5496.82	NPP		
OW 23+10	9/6/2005	5496.81	NPP		
OW 23+10	9/20/2005	5496.90	NPP		
OW 23+10	10/4/2005	5497.86	NPP		
OW 23+10	10/18/2005	5498.06	NPP		
OW 23+10	11/1/2005	5498.04	0.01		
OW 23+10	11/15/2005	5497.95	NPP		
OW 23+10	11/29/2005	5497.39	NPP		
OW 23+10	12/13/2005	5498.00	NPP		
OW 23+10	12/27/2005	5497.91	0.01		
OW 23+10	1/10/2006	5497.93	NPP		
OW 23+10	1/24/2006	5497.87	NPP		
OW 23+10	2/8/2006	5496.84	NPP		
OW 23+10	2/16/2006	5497.85	NPP		
OW 23+10	3/1/2006	5497.81	NPP		
OW 23+10	3/14/2006	5497.84	NPP		
OW 23+10	3/20/2006	5497.83	NPP		
OW 23+10	4/3/2006	5497.83	NPP		
OW 23+10	5/3/2006	5497.81	NPP		
OW 23+10	5/17/2006	5497.84	NPP		
OW 23+10	5/30/2006	5497.83	NPP		
OW 23+10	6/12/2006	5496.62	NPP		
OW 23+10	6/26/2006	5497.83	NPP		







		Corrected	Separate Phase Hydrocarbon		
Well ID	Date	Groundwater Elevation	Thickness		
		(ft amsl)	(ft)		
OW 23+10	7/12/2006	5497.86	0.10		
OW 23+10	7/24/2006	5497.85	0.05		
OW 23+10	8/7/2006	5497.83	0.02		
OW 23+10	8/21/2006	5497.80	NPP		
OW 23+10	9/5/2006	5497.81	NPP		
OW 23+10	9/18/2006	5497.84	0.01		
OW 23+10	10/2/2006	5497.83	NPP		
OW 23+90	5/9/2005	5497.19	NPP		
OW 23+90	5/12/2005	5497.19	NPP		
OW 23+90	5/17/2005	5499.66	NPP		
OW 23+90	5/19/2005	5497.16	NPP		
OW 23+90	5/24/2005	5497.16	NPP		
OW 23+90	5/26/2005	5497.16	NPP		
OW 23+90	5/31/2005	5497.17	NPP		
OW 23+90	6/2/2005	5497.16	NPP		
OW 23+90	6/7/2005	5497.15	NPP		
OW 23+90	6/9/2005	5497.15	NPP		
OW 23+90	6/14/2005	5497.15	NPP		
OW 23+90	6/16/2005	5497.15	NPP		
OW 23+90	6/21/2005	5497.14	NPP		
OW 23+90	6/23/2005	5497.14	NPP		
OW 23+90	6/28/2005	5497.14	NPP		
OW 23+90	7/7/2005	5497.15	NPP		
OW 23+90	7/14/2005	5496.65	NPP		
OW 23+90	7/19/2005	5497.11	NPP		
OW 23+90	7/28/2005	5496.83	NPP		
OW 23+90	8/2/2005	5497.14	NPP		
OW 23+90	8/11/2005	5496.65	NPP		
OW 23+90	8/23/2005	5497.09	NPP		
OW 23+90	9/6/2005	5497.07	NPP		
OW 23+90	9/20/2005	5497.13	NPP		
OW 23+90	10/4/2005	5498.08	NPP		
OW 23+90	10/18/2005	5498.20	NPP		
OW 23+90	11/1/2005	5498.21	NPP		
OW 23+90	11/15/2005	5498.12	NPP		
OW 23+90	11/29/2005	5498.08	NPP		
OW 23+90	12/13/2005	5498.05	NPP		
OW 23+90	12/27/2005	5498.05	NPP		
OW 23+90	1/10/2006	5498.04	NPP		
OW 23+90	1/24/2006	5498.05	NPP		
OW 23+90	2/8/2006	5498.03	NPP		
OW 23+90	2/16/2006	5498.04	NPP		
OW 23+90	3/1/2006	5498.02	NPP		
OW 23+90	3/14/2006	5498.02	NPP		







OW 25+70

OW 25+70

OW 25+70

11/15/2005

11/29/2005

12/13/2005

NPP

NPP

NPP

5497.30

5498.29

5498.25



		Corrected	Separate Phase Hydrocarbon
Well ID	Date	Groundwater Elevation	Thickness
		(ft amsl)	(ft)
OW 25+70	12/27/2005	5498.27	NPP
OW 25+70	1/10/2006	5498.29	NPP
OW 25+70	1/24/2006	5498.25	NPP
OW 25+70	2/8/2006	5498.18	NPP
OW 25+70	2/16/2006	5498.22	NPP
OW 25+70	3/1/2006	5498.19	NPP
OW 25+70	3/14/2006	5498.21	NPP
OW 25+70	3/20/2006	5498.17	NPP
OW 25+70	4/3/2006	5498.21	NPP
OW 25+70	5/3/2006	5498.27	NPP
OW 25+70	5/17/2006	5498.28	NPP
OW 25+70	5/30/2006	5498.25	NPP
OW 25+70	6/12/2006	5498.21	NPP
OW 25+70	6/26/2006	5498.21	NPP
OW 25+70	7/12/2006	5498.32	NPP
OW 25+70	7/24/2006	5498.19	NPP
OW 25+70	8/7/2006	5498.24	NPP
OW 25+70	8/21/2006	5498.22	NPP
OW 25+70	9/5/2006	5498.27	NPP
OW 25+70	9/18/2006	5498.21	NPP
OW 25+70	10/2/2006	5498.22	NPP

Notes:

ft = feet amsl = above mean level NWP = No Water Present NPP = No Product Present CW = Collection Well OW = Observation Well



#### Collection Well Fluids Monitoring

January 2007

Well ID	Date	Measuring Point	Total Well	Depth To Product	Depth To Water	Corrected Groundwater	Separate Phase Hydrocarbon
		Elevation		(DTP)	(DTW)	Elevation	Thickness
2 8	1/2/2007	5506.68	14.09	NPP	7.86	5498.82	NPP
2 <del>1</del>	1/15/2007	5506.68	14.09	NPP	7.96	5498.72	NPP
	1/29/2007	5506.68	14.09		[ 7.97	5498.71	
	1/2/2007	5505.13	13.74	NPP	6.18	5498.95	NPP
13 C	1/15/2007	5505.13	13.74	NPP	6.25	5498.88	NPP
1.1.1 proved in processing of the APT Database with control	1/29/2007	5505.13	13.74	NPP	6.21	5498.92	NPP
. 10	1/2/2007	5503.87	13.11	NPP	5.26	5498.61	NPP
	1/15/2007	5503.87	13.11	NPP	5.25	5498.62	NPP
	1/29/2007	5503.87	13.11	NPP	5.27	5498.60	
	1/2/2007	5503.76	12.27	NPP	6.14	5497.62	NPP
2+2(	1/15/2007	5503.76	12.27	NPP	6.15	5497.61	NPP
4,	1/29/2007	5503.76	12.27	NPP	6.18	5497.58	NPP
anthrony tax	1/2/2007	5503.84	11.45	NPP	6.65	5497.19	NPP
	1/15/2007	5503.84	11,45	NPP	6.66	5497.18	NPP
	1/29/2007	5503.84	11.45	NPP	6.67	5497.17	NPP
an a	1/2/2007	5504.02	11.63	NPP	7.43	5496.59	NPP
19 24	1/15/2007	5504.02	11.63	NPP	7,43	5496.59	NPP
0 00	1/29/2007	5504.02	11.63	NPP	7.43	5496.59	NPP
10	1/2/2007	5503.80	12.6	7.49	7.52	5496.30	0.03
N H	1/15/2007	5503.80	12.6	7.51	7.52	5496.29	0.01
	1/29/2007	5503.80	12.6	7.50	7,52	5496.30	0.02
÷	1/2/2007	5503.95	12.27	NPP	6.61	5497.34	NPP
15	1/15/2007	5503.95	12.27	NPP	5,59	5498.36	NPP
Ū	1/29/2007	5503.95	12.27	NPP	5.60	5498.35	NPP
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1/2/2007	5504.39	13.05	NPP	6.46	5497.93	NPP
2 2	1/15/2007	5504.39	13.05	NPP	6.49	5497.90	NPP
Ū	1/29/2007	5504.39	13.05	NPP	6.44	5497.95	NPP
+	1/2/2007	5504.32	12.86	NPP	6.25	5498.07	NPP
V 16	1/15/2007	5504.32	12.86	NPP	6.27	5498.05	NPP
с С	1/29/2007	5504.32	12.86	NPP	6.27	5498.05	NPP
+	1/2/2007	5504.52	9,99	6.23	6.24	5498.29	0.01
V 19 50	1/15/2007	5504.52	9,99	NPP	6.26	5498,26	NPP
5 S	1/29/2007	5504.52	9.99	NPP	6.21	5498.31	NPP
analy is a subsection of the subsection of	1/2/2007	5508.04	12.34	8.98	8 99	5499.06	0.01
00	1/15/2007	5508.04	12.34	NPP	9.02	5499.02	NPP
N O	1/29/2007	5508.04	12.34	NPP	8.99	5499.05	NPP
÷	1/2/2007	5510.04	14.65	NPP	10.63	5499.41	NPP
10.2	1/15/2007	5510.04	14.65	NPP	10.63	5499.41	NPP
ΰ	1/29/2007	5510.04	14.65	NPP	10.61	5499.43	NPP
±	1/2/2007	5507.32	11.72	NPP	8.14	5499.18	NPP
90 90	1/15/2007	5507.32	11.72	NPP	8.17	5499.15	NPP
Š	1/29/2007	5507.32	11.72	NPP	8.33	5498.99	NPP
+	1/2/2007	5505.90	12.25	7.13	7.14	5498 77	0.01
4 25 95	1/15/2007	5505.90	12.25	NPP	7.16	5498.74	NPP
ວັ	1/29/2007	5505.90	12.25	NPP	7.16	5498.74	NPP

# **Observation Well Fluids Monitoring January 2007**

111.1115		Measuring	Total Well	Depth To	Depth To	Corrected	Separate Phase
	Date	Elevation	Depth	(DTP)	Water (DTW)	Elevation	Hydrocarbon
≥ °č	1/2/2007	5506.62	12.26	NPP	11.07	5495.55	NPP
ōŧ	1/15/2007	5506.62	12.26	NPP	11.15	5495.47	NPP
	1/29/2007	5506.62	12.26	NPP	11.21	5495.41	NPP
50 K	1/2/2007	5508.03	14.36	12.86	12.91	5495.16	0.05
ō‡	1/15/2007	5508.03	14.36	12.93	12.95	5495.10	0.02
	1/29/2007	5508.03	14.36	13.03	13.05	5495.00	0.02
85 <b>×</b>	1/2/2007	5507.31	15.06	NPP	12.41	5494.90	NPP
٥÷	1/15/2007	5507.31	15.06	NPP	12.46	5494.85	NPP
	1/29/2007	5507.31	15.06	12.52	12.53	5494.79	0.01
w 50	1/2/2007	5507.59	13.67	13.52	13.59	5494.06	0.07
0 +2	1/15/2007	5507.59	13.67	13.55	13.56	5494.04	0.01
	1/29/2007	5507.59	13.67	NPP	13.32	5494.27	NPP
3 ℃	1/2/2007	5504.78	14.67	NPP	DRY		NPP
0 <b>+</b> 9	1/15/2007	5504.78	14.67	NPP	DRY		NPP
	1/29/2007	5504.78	14.67	NPP	DRY		
3 €	1/2/2007	5506.53	15.99	NPP	DRY	ann an tha tha tha an tha an tha an that an that an	NPP
Ō ╆	1/15/2007	5506.53	15.99	NPP	DRY		NPP
	1/29/2007	5506.53	15.99	NPP	DRY		
ي <u>+</u> ≳	1/2/2007	5506.70	16.59	NPP	11.94	5494.76	NPP
924	1/15/2007	5506.70	16.59	NPP	11.97	5494.73	NPP
	1/29/2007	5506.70	16.59	NPP	12.01	5494.69	NPP
≥‡∘	1/2/2007	5508.14	12.96	NPP	DRY	na na provinsko positika na provinsko na provinsko na provinsko na provinsko na provinsko na provinsko na provi Na na provinsko positika na provinsko provinsko provinsko provinsko provinsko provinsko provinsko provinsko prov	NPP
04-	1/15/2007	5508.14	12.96	NPP	DRY		NPP
	1/29/2007	5508.14	12.96	NPP	DRY		NPP
3 # 0	1/2/2007	5508.43	15.21	NPP	12.13	5496.30	NPP
040	1/15/2007	5508.43	15.21	NPP	12.19	5496.24	NPP
	1/29/2007	5508.43	15.21	NPP	12.27	5496.16	NPP
20 <del>+</del> 05	1/2/2007	5508.03	13.00	NPP	12.53	5495.50	NPP
	1/15/2007	5508.03	13.00	NPP	12.43	5495,60	NPP
Chan be with the general sector of the secto	1/29/2007	5508.03	13.00	NPP	11.21	5496.82	
8 ± 8	1/2/2007	5506.91	14.16	NPP	11.09	5495.82	NPP
	1/15/2007	5506.91	14.16	11.35	11.36	5495.56	0.01
an a	1/29/2007	5506.91	14.16	INPP Internet accounting	11,50	5495.41	
10 ± 0	1/2/2007	5514.12	18.34	16.25	16.26	5497.87	0.01
	1/15/2007	5514.12	18.34	NPP	16.31	5497.81	NPP
2012275	1/29/2007	5514.12	18.34	NPP	16.29	5497.83	
≥ ¥ õ	1/2/2007	5515.18	18.01	NPP	17.12	5498.06	NPP
0 4 5	1/15/2007	5515.18	18.01	NPP	17.16	5498.02	NPP
	1/29/2007	5515.18	18.01	NPP	17.21	5497.97	NPP
₹‡o	1/2/2007	5509.00	13.98	10.73	10.74	5498.27	0.01
770	1/15/2007	5509.00	13.98	NPP	10.77	5498.23	NPP
	1/29/2007	5515.18	13.98	NPP	10.77	5504.41	NPP



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# Collection Well Fluids Monitoring February 2007

		Measuring	Total Well	Depth To	Depth To	Corrected	Separate Phase
Well ID	Date	Point Elevation	Depth	Product (DTP)	Water (DTW)	Groundwater Elevation	Hydrocarbon
	2/12/2007	5506 68	14 09	NPP	7 94	5498.74	NPP
N09+	2/26/2007	5506.68	14.09	NPP	7.85	5498.83	NPP
		5506.68	14.09	NPP			NPP
ant fina or fire a week a strength of the second sec	2/12/2007	5505 13	13 74	NPP	6.21	5498 92	NPP
120 F	2/26/2007	5505.13	13.74	NPP	6.13	5499.00	NPP
- ÷		5505.13	13.74	NPP			NPP
an with with looks managements	0/40/2007	EE00.07			E OC	E408.01	NDD
85 K	2/12/2007	5503.87	13.11		5.20	5498.63	
0 ÷	2/20/2007	5503.87	13.11	NPP	5.24	0400.00	NPP
та "Чара Валукирата и каласта ал	0/40/0007	5500.70	40.07		0.44	F 407 00	
≥õ	2/12/2007	5503.76	12.27	NPP	6.14	5497.62	NPP
ΰ <u></u> t	2/26/2007	5503.76	12.27		6.17	5497.59	NPP
weise addit fallen der andere a			\$2.21		- Marker wares of		
38	2/12/2007	5503.84	11.45	NPP	6.59	5497.25	NPP
5 t	2/26/2007	5502.84	11.45		6,60	5497.24	
		0003.84	11.45				
≥ 2	2/12/2007	5504.02	11.63	NPP	7.40	5496.62	NPP
ο μ	2/26/2007	5504.02	11.63	NPP	7.35	5496.67	NPP
	2/42/2007	5504.02	11.63		7.40	E400.24	NPP
≥ 5	2/12/2007	5503.80	12.0	7.40	7.48	5496.34	0.02
0 #	2/20/2007	5503.80	12.0	1.40	7.41	5496.40	0.01
	langung genergen gen		12.0	v 21000 0.1000-000-000000000000000000000000		and the second warder ward.	V.00
2 + 2	2/12/2007	5503.95	12.27	NPP	5.60	5498.35	NPP
N C	2/26/2007	5503.95	12.27		5.57	5498.38	
an a	n väätten valaisin on ta taanaan program aa		12.21		an alter to give the antice of the second second		INF F
44	2/12/2007	5504.39	13.05	NPP	6.46	5497.93	NPP
2 C	2/26/2007	5504.39	13.05	NPP	6.43	5497.96	NPP
Large different we an out ordered	and an and a second	3304.39	13.05	NEE	A Street States and the States	ant - a sub-different set	INFP
16+	2/12/2007	5504.32	12.86	NPP	6.27	5498.05	NPP
N <sup>0</sup>	2/26/2007	5504.32	12.86	NPP	6.28	5498.04	NPP
·····	27.6 (	5504.32	12.86	NPP			NPP
19+	2/12/2007	5504.52	9.99	NPP	6.15	5498.37	NPP
2M	2/26/2007	5504.52	9.99	NPP	6.18	5498.34	NPP
elacohitchernenzen: el mar e marce	ade VIII a costa contactor	5504.52	9.99	NPP	control territoripersonal Mitche i	which that the fitting out the part of	NPP
22+	2/12/2007	5508.04	12.34	NPP	8.98	5499.06	NPP
Ň	1/15/2007	5508.04	12.34	NPP	8.99	5499.05	NPP
	2/12/2007	5508.04	12.34	NPP	10.00	E400.41	NPP
23+	2/26/2007	5510.04	14.65		10.63	5499.41	
S.	212012001	5510.04	14.65	NPP	10.04	0433.40	NPP
				2	1977 (A. 1911)	Yanishi ingi kugʻasi 2 🚬 soo casay ani ya	PNL F
0 23+	2/12/2007	5507.32	11./2		8.14	5499.18	NPP
່≷ົ	212012001	5507.32	11.72		0.15	5499,17	
	- Transferration (Sector of Sector o	3307.32	11.72		Contract Contraction	an	
55+	2/12/2007	5505.90	12.25	7.13	7.14	5498.77	0.01
∧ <sup>6</sup>	2/26/2007	5505.90	12.25	NPP	7.14	5498.76	NPP
		5505,90	12.25	NPP			NPP

Observation	Well F	luids	Monitoring	February	/ 2007
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Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness	
≥ 60 60	2/12/2007	5506.62	12.26	NPP	11.3	5495.32	NPP	
04	2/26/2007	5506.62	12.26	NPP	11.32	5495.30	NPP	
-50	2/12/2007	5508.03	14.36	13.12	13.16	5494.90	0.04	
÷.	2/26/2007	5508.03	14.36	NPP	13.15	5494.88	NPP	
85 85	2/12/2007	5507.31	15.06	12.59	12.60	5494.72	0.01	
0 <del>%</del>	2/26/2007	5507.31	15.06	12.64	12.65	5494.67	0.01	
50 50	2/12/2007	5507.59	13.67	13.31	13.32	5494.28	0.01	
0+0	2/26/2007	5507.59	13.67	13.26	13.27	5494.33	0.01	
∧ 02	2/12/2007	5504.78	14.67	NPP	DRY	inal and Adding Adding and India and India and Adding and Adding Adding and Adding and Adding and Adding and A	NPP	
0 5	2/26/2007	5504.78	14.67	NPP	DRY		NPP	
<b>2</b> 6	2/12/2007	5506.53	15.99	NPP	DRY	ine i gu unange ngagan disanté nu 2 - 42.55 Kang Propinsi	NPP	
0 <del>*</del>	2/26/2007	5506.53	15.99	NPP	DRY		NPP	
2 ± 5	2/12/2007	5506.70	16.59	NPP	12.01	5494.69	NPP	
0	2/26/2007	5506.70	16.59	NPP	12.02	5494.68	NPP	
≥±0	2/12/2007	5508.14	12.96	NPP	DRY		NPP	
740	2/26/2007	5508.14	12.96	NPP	DRY		NPP	
3 .≴ 0	2/12/2007	5508.43	15.21	NPP	12.34	5496.09	NPP	
0 9 9 0	2/26/2007	5508.43	15.21	NPP	12.34	5496.09	NPP	
- Ma +6	2/12/2007	5508.03	13.00	NPP	12.54	5495.49	NPP	
~~~~	2/26/2007	5508.03	13.00	NPP	12.46	5495.57	NPP	
00 2+∑	2/12/2007	5506.91	14.16	NPP	11.32	5495.59	NPP	
0 4 0	2/26/2007	5506.91	14.16	11.35	11.13	5495.60	-0.22	
<u>0</u> 4 €	2/12/2007	5514.12	18.34	NPP	16.29	5497.83	NPP	
7 60	2/26/2007	5514.12	18.34	NPP	16.27	5497.85	NPP	
3.*∘	2/12/2007	5515.18	18.01	NPP	17.11	5498.07	NPP	
92.0		5515.18	18.01	NPP	17.12	5498.06	NPP	
3.≿∘	2/12/2007	5509.00	13.98	NPP	10.79	5498.21	NPP	
7 20	2/26/2007	5509.00	13.98	NPP	10.77	5498.23	NPP	



# Collection Well Fluids Monitoring March 2007

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
≥ 09	3/12/2007	5506.68	14.09	NPP	7.94	5498.74	NPP
υţ	3/26/2007	5506.68	14.09	NPP	7.82	5498.86	NPP
50 50	3/12/2007	5505.13	13.74	NPP	6.16	5498.97	NPP
5 <del>*</del>	3/26/2007	5505.13	13.74	NPP	6.13	5499.00	NPP
85 ×	3/12/2007	5503.87	13.11	NPP	5.24	5498.63	NPP
Ū #	3/26/2007	5503.87	13.11	NPP	5.24	5498.63	NPP
۶0 50	3/12/2007	5503.76	12.27	NPP	6.18	5497.58	NPP
÷۲	3/26/2007	5503.76	12.27	NPP	6.16	5497.60	NPP
N 70	3/12/2007	5503.84	11.45	NPP	6.60	5497.24	NPP
5+j	3/26/2007	5503.84	11.45	NPP	6.56	5497.28	NPP
10	3/12/2007	5504.02	11.63	NPP	7.41	5496.61	NPP
5 <del>*</del>	3/26/2007	5504.02	11.63	NPP	7.35	5496.67	NPP
W -45	3/12/2007	5503.80	12.6	7.49	7.5	5496.31	0.01
°. °.	3/26/2007	5503.80	12.6	7.40	7.41	5496.40	0.01
2 <u>+</u> ₹	3/12/2007	5503.95	12.27	NPP	5.57	5498.38	NPP
J + C	3/26/2007	5503.95	12.27	NPP	5.53	5498.42	NPP
≥ ‡ ∘	3/12/2007	5504.39	13.05	NPP	6.46	5497.93	NPP
740	3/26/2007	5504.39	13.05	NPP	6.41	5497.98	NPP
≥ ± 0	3/12/2007	5504.32	12.86	NPP	6.29	5498.03	NPP
0 4 0	3/26/2007	5504.32	12.86	NPP	6.27	5498.05	NPP
3 2 0	3/12/2007	5504.52	9.99	NPP	6.22	5498.30	NPP
±10 10 10	3/26/2007	5504.52	9.99	NPP	6.18	5498.34	NPP
< : . o	3/12/2007	5508.04	12.34	NPP	9.02	5499.02	NPP
6 Z C	3/26/2007	5508.04	12.34	NPP	9.02	5499.02	NPP
3+ K	3/12/2007	5510.04	14.65	NPP	10.66	5499.38	NPP
790	3/26/2007	5510.04	14.65	NPP	10.66	5499.38	NPP
2 # 2	3/12/2007	5507.32	11.72	NPP	8.17	5499.15	NPP
0 N 0	3/26/2007	5507.32	11.72	NPP	8.13	5499.19	NPP
3 # 50	3/12/2007	5505.90	12.25	7.13	7.15	5498.77	0.02
9.9 9.0	3/26/2007	5505.90	12.25	NPP	7.14	5498.76	NPP



Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
60 <b>≷</b>	3/12/2007	5506.62	12.26	11.35	11.36	5495.27	0.01
<u>•</u>	3/26/2007	5506.62	12.26	NPP	11.36	5495.26	NPP
× 00	3/12/2007	5508.03	14.36	13.23	13.26	5494.79	0.03
<u> </u>	3/26/2007	5508.03	14.36	13.20	13.41	5494.79	0.21
85 85	3/12/2007	5507.31	15.06	12.68	12.78	5494.61	0.10
9 + 0	3/26/2007	5507.31	15.06	12.77	12.87	5494.52	0.10
50 50	3/12/2007	5507.59	13.67	NPP	13.25	5494.34	NPP
2+0	3/26/2007	5507.59	13.67	13.21	13.24	5494.37	0.03
W 70	3/12/2007	5504.78	14.67	NPP	DRY		NPP
0 +5	3/26/2007	5504.78	14.67	NPP	DRY	enter Manufacture web and	NPP
√ 10	3/12/2007	5506.53	15.99	NPP	DRY		NPP
0 #	3/26/2007	5506.53	15.99	NPP	DRY		NPP
5 + ₹	3/12/2007	5506.70	16.59	NPP	12.06	5494.64	NPP
740	3/26/2007	5506.70	16.59	NPP	12.05	5494.65	NPP
3‡∘	3/12/2007	5508.14	12.96	NPP	DRY		NPP
740	3/26/2007	5508.14	12.96	NPP	DRY		NPP
3 ≴ 0	3/12/2007	5508.43	15.21	NPP	12.41	5496.02	NPP
010	3/26/2007	5508.43	15.21	NPP	12.49	5495.94	NPP
A + 02	3/12/2007	5508.03	13.00	NPP	12.54	5495.49	NPP
07	3/26/2007	5508.03	13.00	NPP	12.54	5495.49	NPP
00 <del>4</del> 00	3/12/2007	5506.91	14.16	NPP	11.43	5495.48	NPP
0 4 9	3/26/2007	5506.91	14.16	NPP	11.04	5495.87	NPP
3+ 10	3/12/2007	5514.12	18.34	NPP	16.29	5497.83	NPP
007	3/26/2007	5514.12	18.34	NPP	16.31	5497.81	
3+ N	3/12/2007	5515.18	18.01	NPP	17.14	5498.04	NPP
0 % 0	3/26/2007	5515.18	18.01	NPP	17.11	5498.07	
≥ <del>,</del> 0	3/12/2007	5509.00	13.98	NPP	10.80	5498.20	NPP
730	3/26/2007	5509.00	13.98	NPP	10.77	5498.23	NPP

# **Observation Well Fluids Monitoring March 2007**

# Collection Well Fluids Monitoring April 2007

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To : Water (DTW)	Corrected . Groundwater Elevation	Separate Phase Hydrocarbon
0	4/9/2007	5506.68	14.09	NPP	7.87	5498.81	NPP
0+6 0+6	4/23/2007	5506.68	14.09	NPP	7.86	5498.82	NPP
<u>&gt;</u> 0	4/9/2007	5505.13	13.74	NPP	6.13	5499.00	NPP
1+5 1+5	4/23/2007	5505.13	13.74	NPP	6.13	5499.00	NPP
N 85	4/9/2007	5503.87	13.11	NPP	5.24	5498.63	NPP
Э. С З то	4/23/2007	5503.87	13.11	NPP	5.23	5498.64	NPP
20 K	4/9/2007	5503.76	12.27	NPP	6.16	5497.60	NPP
0 <del>1</del>	4/23/2007	5503.76	12.27	NPP	6.13	5497.63	NPP
N 07	4/9/2007	5503.84	11.45	NPP	6.55	5497.29	NPP
Ċ ţ	4/23/2007	5503.84	11.45	NPP	6.53	5497.31	NPP
W -10	4/9/2007	5504.02	11.63	NPP	7.28	5496.74	NPP
5 to 1	4/23/2007	5504.02	11.63	NPP	7.32	5496.70	NPP
CW +45	4/9/2007	5503.80	12.6	7.22	7.24	5496.58	0.02
8	4/23/2007	5503.80	12.6	7.35	7.36	5496.45	0.01
15 15	4/9/2007	5503.95	12.27	NPP	5.55	5498.40	NPP
	4/23/2007	5503.95	12.27	NPP	5.53	5498.42	NPP
10 ± ∛	4/9/2007	5504.39	13.05	NPP	6.38	5498.01	NPP
	4/23/2007	5504.39	13.05	NPP	6.40	5497.99	NPP
:W 6+ 30	4/9/2007	5504.32	12.86	NPP	6.27	5498.05	NPP
0	4/23/2007	5504.32	12.86	NPP	6.24	5498.08	NPP
₩ 9+ 50	4/9/2007	5504.52	9.99	NPP	6.16	5498.36	NPP
	4/23/2007	5504.52	9.99	NPP	6.09	5498.43	
:W 2+ 00	4/9/2007	5508.04	12.34	NPP	9.00	5499.04	NPP
0 70	4/23/2007	5508.04	12.34	NPP	8.99	5499.05	NPP
23+ 10	4/9/2007	5510.04	14.65	NPP	10.66	5499.38	NPP
formation descent of the second	4/23/2007		14.00	10.03	1U.04	5499.41	0.01
90 CV	4/9/2007	5507.32	11.72		8.16	5499.16	NPP
	4/23/2007	5507.32	11.72 11.72		0.15	0499.17	
254 95	4/9/2007	5505.90	12.25	7.13	7.14	5498.77	0.01
	4/23/2007 NPP = No	5505.90 D Product Preser	12.25 nt NWP	NPP No Water P	7.13 Present	5498.77	NPP

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# **Observation Well Fluids Monitoring April 2007**

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness
09+0 MO	4/9/2007 4/23/2007	5506.62 5506.62	12.26 12.26	NPP NPP	11.4 11.36	5495.22 5495.26	NPP NPP
OW 1+50	4/9/2007 4/23/2007	5508.03 5508.03	14.36 14.36	13.23 13.21	13.88 13.55	5494.67 5494.75	0.65
OW 3+85	4/9/2007 4/23/2007	5507.31 5507.31	15.06 15.06	12.75 12.75	12.95 12.95	5494.52 5494.52	0.20 0.20
OW 5+50	4/9/2007 4/23/2007	5507.59 5507.59	13.67 13.67	13.24 13.47	13.25 13.63	5494.35 5494.09	0.01
OW 6+70	4/9/2007 4/23/2007	5504.78 5504.78	14.67 14.67	NPP NPP	DRY DRY	er avs. 20 c. <sup>on</sup> 100 veffels weitigt aus transfer (1994)	NPP NPP
OW 8+10	4/9/2007 4/23/2007	5506.53 5506.53	15.99 15.99	NPP NPP	DRY DRY		NPP NPP
OW 11+ 15	4/9/2007 4/23/2007	5506.70 5506.70	16.59 16.59	NPP NPP	11.97 11.98	5494.73 5494.72	NPP NPP
OW 14+ 10	4/9/2007 4/23/2007	5508.14 5508.14	12.96 12.96	NPP NPP	DRY DRY		NPP NPP
OW 16+ 60	4/9/2007 4/23/2007	5508.43 5508.43	15.21 15.21	NPP NPP	12.49 12.55	5495.94 5495.88	NPP NPP
OW 19+ 50	4/9/2007 4/23/2007	5508.03 5508.03	13.00 13.00	NPP NPP	12.53 12.65	5495.50 5495.38	NPP NPP
OW 22+ 00	4/9/2007 4/23/2007	5506.91 5506.91	14.16 14.16	NPP NPP	11.33 11.52	5495.58 5495.39	NPP NPP
OW 23+ 10	4/9/2007 4/23/2007	5514.12 5514.12	18.34 18.34	NPP NPP	16.28 16.32	5497.84 5497.80	NPP NPP
OW 23+ 90	4/9/2007 4/23/2007	5515.18 5515.18	18.01 18.01	NPP NPP	17.13 17.12	5498.05 5498.06	NPP
OW 25+ 70	4/9/2007 4/23/2007	5509.00 5509.00	13.98 13.98	NPP NPP	10.74 10.74	5498.26 5498.26	NPP NPP

NPP = No Product Present NWP = No Water Present

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# Collection Well Fluids Monitoring May 2007

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon
<b>≥</b> %	5/7/2007	5506.68	14.09	NPP	8.03	5498.65	NPP
ΰŧ	5/21/2007	5506.68	14.09	NPP	8.11	5498.57	NPP
20 <	5/7/2007	5505.13	13.74	NPP	6.69	5498.44	NPP
υŦ	5/21/2007	5505.13	13.74	NPP	6.81	5498.32	NPP
85	5/7/2007	5503.87	13.11	NPP	5.54	5498.33	NPP
Ú ÷	5/21/2007	5503.87	13.11	NPP	5.64	5498.23	NPP
50 K	5/7/2007	5503.76	12.27	NPP	6.2	5497.56	NPP
Ú 2 t	5/21/2007	5503.76	12.27	NPP	6.25	5497.51	NPP
<b>≥</b> 02	5/7/2007	5503.84	11.45	NPP	6.59	5497.25	NPP
Ú t	5/21/2007	5503.84	11.45	NPP	6.61	5497.23	NPP
<u>36</u>	5/7/2007	5504.02	11.63	NPP	7.40	5496.62	NPP
ပ် <del>န</del> ္တ	5/21/2007	5504.02	11.63	NPP	7.37	5496.65	NPP
55 145	5/7/2007	5503.80	12.6	7.45	7.46	5496.35	0.01
0 <del>.</del>	5/21/2007	5503.80	12.6	7.40	7.42	5496.40	0.02
≥ <u>+</u> Ω	5/7/2007	5503.95	12.27	NPP	5.64	5498.31	NPP
740	5/21/2007	5503.95	12.27	NPP	5.56	5498.39	NPP
≥‡∘	5/7/2007	5504.39	13.05	NPP	6.50	5497.89	NPP
740	5/21/2007	5504.39	13.05	NPP	6.35	5498.04	NPP
3 . * 0	5/7/2007	5504.32	12.86	NPP	6.29	5498.03	NPP
0 <del>1</del> 0	5/21/2007	5504.32	12.86	NPP	6.24	5498.08	NPP
≥‡∘	5/7/2007	5504.52	9.99	NPP	6.21	5498.31	NPP
v <del>,</del> v	5/21/2007	5504.52	9.99	NPP	6.12	5498.40	NPP
≥ ‡ 0	5/7/2007	5508.04	12.34	NPP	9.02	5499.02	NPP
0 % 0	5/21/2007	5508.04	12.34	NPP	8.09	5499.95	NPP
0 <del>3</del> ≮	5/7/2007	5510.04	14.65	NPP	10.66	5499.38	NPP
7 % C	5/21/2007	5510.04	14.65	10.63	10.66	5499.40	0.03
≥ # 0	5/7/2007	5507.32	11.72	NPP	8.16	5499.16	NPP
0×9	5/21/2007	5507.32	11.72	NPP	8.15	5499.17	NPP
3 t u	5/7/2007	5505.90	12.25	7.13	7.14	5498.77	0.01
9.25 9.25	5/21/2007	5505.90	12.25	NPP	7.14	5498.76	NPP
-	NPP = Nc	Product Preser	nt NWP	= No Water P	resent		· · · · · · · · · · · · · · · · · · ·

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness	
> %	5/7/2007	5506.62	12.26	NPP	11.32	5495.30	NPP	
ō ţ	5/21/2007	5506.62	12.26	NPP	11.3	5495.32	NPP	
50 K	5/7/2007	5508.03	14.36	13.22	13.61	5494.73	0.39	
<u> </u>	5/21/2007	5508.03	14.36	13.20	13.64	5494.74	0.44	
۳ 85 85	5/7/2007	5507.31	15.06	12.78	13.17	5494.45	0.39	
0 #	5/21/2007	5507.31	15.06	12.96	13.33	5494.28	0.37	
50 W	5/7/2007	5507.59	13.67	13.36	13.37	5494.23	0.01	
0 <del>1</del>	5/21/2007	5507.59	13.67	13.32	13.34	5494.27	0.02	
M 02	5/7/2007	5504.78	14.67	NPP	DRY	an a	NPP	
0 5	5/21/2007	5504.78	14.67	NPP	DRY		NPP	
10 V	5/7/2007	5506.53	15.99	NPP	DRY	and a second	NPP	
0 <del>&amp;</del>	5/21/2007	5506.53	15.99	NPP	DRY		NPP	
2 ± 5	5/7/2007	5506.70	16.59	NPP	11.99	5494.71	NPP	
02-	5/21/2007	5506.70	16.59	NPP	11.97	5494.73	NPP	
3±0	5/7/2007	5508.14	12.96	NPP	DRY		NPP	
740	5/21/2007	5508.14	12.96	NPP	DRY		NPP	and a
3 .± 0	5/7/2007	5508.43	15.21	NPP	12.52	5495.91	NPP	
0 16 6	5/21/2007	5508.43	15.21	NPP	12.48	5495.95	NPP	
01 10 10	5/7/2007	5508.03	13.00	NPP	12.7	5495.33	NPP	
0 4 *	5/21/2007	5508.03	13.00	NPP	12.78	5495.25	NPP	
0 2+ 2+	5/7/2007	5506.91	14.16	NPP	11.45	5495.46	NPP	
0 % 0	5/21/2007	5506.91	14.16	NPP	11.56	5495.35	NPP	
≥ ¥ 0	5/7/2007	5514.12	18.34	NPP	16.29	5497.83	NPP	
730	5/21/2007	5514.12	18.34	NPP	16.32	5497.80	NPP	
3 .± 0	5/7/2007	5515.18	18.01	NPP	17.14	5498.04	NPP	
9 Q	5/21/2007	5515.18	18.01	NPP	17.17	5498.01	NPP	
2 + 0	5/7/2007	5509.00	13.98	NPP	10.74	5498.26	NPP	
0) 7(	5/21/2007	5509.00	13.98	NPP	10.75	5498.25	NPP	

# **Observation Well Fluids Monitoring MAY 2007**



# **Collection Well Fluids Monitoring June 2007**

NPP = No Product Present

NWP = No Water Present



# **Observation Well Fluids Monitoring JUNE 2007**

Well ID	Date	Measuring Point Elevation	Total Well Depth	Depth To Product (DTP)	Depth To Water (DTW)	Corrected Groundwater Elevation	Separate Phase Hydrocarbon Thickness	D
N 09 N 09	6/4/2007	5506.62	12.26	NPP	11.31	5495.31	NPP	
05	6/18/2007	5506.62	12.26	NPP	11.4	5495.22	NPP	
50 V	6/4/2007	5508.03	14.36	13.30	13.39	5494.71	0.09	
•÷	6/18/2007	5508.03	14.36	13.35	13.70	5494.61	0.35	
85 85	6/4/2007	5507.31	15.06	12.77	13.47	5494.40	0.70	
0 #	6/18/2007	5507.31	15.06	12.77	13.70	5494.35	0.93	
50 W	6/4/2007	5507.59	13.67	13.48	13.52	5494.10	0.04	
0 <del>;</del> ;	6/18/2007	5507.59	13.67	13.40	13.41	5494.19	0.01	
N 02	6/4/2007	5504.78	14.67	NPP	DRY	977*** 55 2000/00099999955551998799512 256629994 4724****************************	NPP	
0 <del>;</del>	6/18/2007	5504.78	14.67	NPP	DRY		NPP	
1° 2 V	6/4/2007	5506.53	15.99	NPP	DRY	ina, magazoniali na 2,5 vili orten negeli na 1960.	NPP	
Ō #	6/18/2007	5506.53	15.99	NPP	DRY		NPP	
2 <u>+</u> ℃	6/4/2007	5506.70	16.59	NPP	12.02	5494.68	NPP	
7 - 0	6/18/2007	5506.70	16.59	NPP	12.02	5494.68	NPP	
3 ± 0	6/4/2007	5508.14	12.96	NPP	DRY	anderen her were seen in the second of the	NPP	
740	6/18/2007	5508.14	12.96	NPP	DRY		NPP	y
≥ ‡ ०	6/4/2007	5508.43	15.21	NPP	12.55	5495.88	NPP	
040	6/18/2007	5508.43	15.21	NPP	12.63	5495.80	NPP	
N + 01	6/4/2007	5508.03	13.00	NPP	12.86	5495.17	NPP	
° − *	6/18/2007	5508.03	13.00	NPP	12.98	5495.05	NPP	
°2 €	6/4/2007	5506.91	14.16	NPP	11.77	5495.14	NPP	
080	6/18/2007	5506.91	14.16	NPP	11.93	5494.98	NPP	
≥ # o	6/4/2007	5514.12	18.34	NPP	16.33	5497.79	NPP	
780	6/18/2007	5514.12	18.34	NPP	16.34	5497.78	NPP	
3 ± 0	6/4/2007	5515.18	18.01	NPP	17.17	5498.01	NPP	
۵%。 ۵	6/18/2007	5515.18	18.01	NPP	17.18	5498.00	NPP	
3 ± 0	6/4/2007	5509.00	13.98	NPP	10.73	5498.27	NPP	
720	6/18/2007	5509.00	13.98	NPP	10.78	5498.22	NPP	



# Collection Well Fluids Monitoring July 2007

Well ID *	Date	· Measuring Pointe	Total Well	Depth To Product	Depth To Water	Corrected Groundwater	Separate Phase
		Elevation	Depth	(DTP)	(DTW)	Elevation	Thickness
> 8	7/2/2007	5506.68	14.09	NPP	8.33	5498.35	NPP
2 <del>4</del>	7/16/2007	5506.68	14.09	NPP	8.32	5498.36	NPP
an an art-sufficiency of suspensions of the	7/30/2007	5506.68	14.09	NPP	8.4	5498.28	NPP
, 0	7/2/2007	5505.13	13.74	NPP	7.09	5498.04	NPP
1+5 1+5	7/16/2007	5505.13	13.74	NPP	7.11	5498.02	NPP
C. C. P. Martin Science (1) - Martin Constants (1)	7/30/2007	5505.13	13.74	NPP	7.13	5498.00	NPP
- 10	7/2/2007	5503.87	13.11	NPP	5.92	5497.95	NPP
3+8 C	7/16/2007	5503.87	13.11	NPP	5.97	5497.90	NPP
	7/30/2007	5503.87	13.11	NPP	6.00	5497.87	NPP
	7/2/2007	5503.76	12.27	NPP	6.39	5497.37	NPP
2+5(	7/16/2007	5503.76	12.27	NPP	6.43	5497.33	NPP
	7/30/2007	5503.76	12.27	NPP	6.44	5497.32	NPP
	7/2/2007	5503.84	11.45	NPP	6.76	5497.08	NPP
M K	7/16/2007	5503.84	11.45	NPP	6.79	5497.05	NPP
	7/30/2007	5503.84	11.45	NPP	6.83	5497.01	NPP
	7/2/2007	5504.02	11.63	NPP	7.52	5496.50	NPP
T C	7/16/2007	5504.02	11.63	NPP	7.54	5496.48	NPP
- 8	7/30/2007	5504.02	11.63	NPP	7.57	5496.45	NPP
2	7/2/2007	5503.80	12.6	NPP	7.57	5496.23	NPP
B+4 V	7/16/2007	5503.80	12.6	NPP	7.55	5496.25	NPP
	7/30/2007	5503.80	12.6	NPP	7.6	5496.20	NPP
+	7/2/2007	5503.95	12.27	NPP	5.66	5498.29	NPP
15 15	7/16/2007	5503.95	12.27	NPP	5.72	5498.23	NPP
Ū	7/30/2007	5503.95	12.27	NPP	5.77	5498.18	NPP
+	7/2/2007	5504.39	13.05	NPP	6.41	5497.98	NPP
24	7/16/2007	5504.39	13.05	NPP	6.37	5498.02	NPP
Ū	7/30/2007	5504.39	13.05	NPP	6.36	5498.03	NPP
+	7/2/2007	5504.32	12.86	NPP	6.25	5498.07	NPP
V 16 60	7/16/2007	5504.32	12.86	NPP	6.25	5498.07	NPP
C	7/30/2007	5504.32	12.86	NPP	6.23	5498:09	NPP
<u>+</u>	7/2/2007	5504.52	9.99	NPP	6.18	5498.34	NPP
V 15	7/16/2007	5504.52	9.99	NPP	6.17	5498.35	NPP
Š	7/30/2007	5504.52	9.99	NPP	6.15	5498.37	NPP
+	7/2/2007	5508.04	12.34	NPP	8.99	5499.05	NPP
00 23	7/16/2007	5508.04	12.34	NPP	9.02	5499.02	NPP
<u>v</u>	7/30/2007	5508.04	12.34	NPP	9.03	5499.01	NPP
t.	7/2/2007	5510.04	14.65	NPP	10.64	5499.40	NPP
10 1	7/16/2007	5510.04	14.65	NPP	10.66	5499.38	NPP
Ū	7/30/2007	5510.04	14.65	NPP	10.69	5499.35	NPP
÷.	7/2/2007	5507.32	11.72	NPP	8.13	5499.19	NPP
2 S O	7/16/2007	5507.32	11.72	NPP	8.15	5499.17	NPP
ΰ	7/30/2007	5507.32	11.72	NPP	8.16	5499.16	NPP
±	7/2/2007	5505.90	12.25	NPP	7.16	5498.74	NPP
V 25 95	7/16/2007	5505.90	12.25	NPP	7.16	5498.74	NPP
5	7/30/2007	5505.90	12.25	NPP	7.17	5498.73	NPP
		Product Preser	t NWP	= No Water P	resent	·	

Page 1 of 1

# Observation Well Fluids Monitoring July 2007

Well ID	Date	Measuring	Total Well	Depth To-	Depth To	Corrected	Phase
Weind	Date	Elevation	Depth	(DTP)	(DTW)	Elevation	Hydrocarbon
× 09	7/2/2007	5506.62	12.26	NPP	11.46	5495.16	NPP
δŧ	7/16/2007	5506.62	12.26	NPP	11.57	5495.05	NPP
	7/30/2007	5506.62	12.26	NPP	11.46	5495.16	NPP
20 8	7/2/2007	5508.03	14.36	13.32	14.02	5494.57	0.70
ōŧ	7/16/2007	5508.03	14.36	13.43	14.13	5494.46	0.70
	7/30/2007	5508.03	14.36	13.45	13.47	5494.58	0.02
۲ 35	7/2/2007	5507.31	15.06	12.83	13.93	5494.26	1.10
õ¥	7/16/2007	5507.31	15.06	12.78	14.02	5494.28	1.24
	7/30/2007	5507.31	15.06	12.81	12.85	5494,49	0.04
N 50	7/2/2007	5507.59	13.67	13.52	13,33	5494.11	-0.19
0 ÷s	7/16/2007	5507.59	13.67	13.35	13.37	5494.24	0.02
	7/30/2007	5507.59	13.67	NPP	13.57	5494.02	NPP
<u> </u>	7/2/2007	5504.78	14.67	NPP	DRY	ng ang Kang Kang Kang Pang Pang Pang Pang Pang Pang Pang P	NPP
0 +9	7/16/2007	5504.78	14.67	NPP	DRY		NPP
	7/30/2007	5504.78	14.67	NPP	DRY		
10 K	7/2/2007	5506.53	15.99	NPP	DRY	ning of a color of the second second second second second	NPP
Ó ≵	7/16/2007	5506.53	15.99	NPP	DRY		NPP
	7/30/2007	5506.53	15.99	NPP	DRY		17 A
ۍ <u>+</u> ک	7/2/2007	5506.70	16.59	NPP	12.03	5494.67	NPP
0 + -	7/16/2007	5506.70	16.59	NPP	12.07	5494.63	NPP
	7/30/2007	5506.70	16.59	NPP	12.10	5494.60	NPP
3 ± 0	7/2/2007	5508.14	12.96	NPP	DRY		NPP
07	7/16/2007	5508.14	12.96	NPP	DRY		NPP
	7/30/2007	5508.14	12.96	NPP	DRY		NPP
3 ≴ 0	7/2/2007	5508.43	15.21	NPP	12.65	5495.78	NPP
0∓0	7/16/2007	5508.43	15.21	NPP	12.76	5495.67	NPP
	7/30/2007	5508.43	15.21	NPP	12.78	5495.65	NPP
20 <del>4</del> 0	7/2/2007	5508.03	13.00	NPP	DRY		NPP
94	7/16/2007	5508.03	13.00	NPP	DRY		NPP
2205551 America & contract conversion and and	7/30/2007	5508.03	13.00	NPP	DRY	sality a van manakamingan a baden milit om a trade v var	NPP
M 22 8	7/2/2007	5506.91	14.16	NPP	12.16	5494.75	NPP
	7/16/2007	5506.91	14.16	11.35	12.26	5495.38	0.91
679) 21874 65726777777777786 4 1678-1686	//30/2007	5506.91	14.10	NPP	12,30	5494.55	
10 ± 0	7/2/2007	5514.12	18.34	16.25	16.32	5497.86	0.07
	7/16/2007	5514.12	18.34	NPP	16.34	5497.78	NPP
ugar magica Winapoten 2015 a createst	7/30/2007	5514.12	18.34	NPP	16.30	5497.82	NPP
≥ ÷ o	7/2/2007	5515,18	18.01	NPP	17.18	5498.00	NPP
0 0 0	7/16/2007	5515.18	18.01	NPP	17.15	5498.03	NPP
generation and the second s	7/30/2007	5515.18	18.01	NPP	17.18	5498.00	NPP
≥‡o	7/2/2007	5509.00	13.98	NPP	10.74	5498.26	NPP
770	7/16/2007	5509.00	13.98	NPP	10.76	5498.24	NPP
	7/30/2007	5515.18	13.98	NPP	10.76	5504.42	NPP

		Parameters					
		Benzene	Toluene	Ethylbenzene	Xylene	MTBE	DRO
,		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
WQCC 20NMAC 6.2.3103 (mg/L):		0.01	0.75	0.75	0.62	NE	NE
Well ID:	Date Sampled:						
CW 0+60	4/6/2006	0.360	0.015	0.480	0.160	<0.025	NA
f.	8/5/2005	0.400	<0.005	0.800	0.350	NA	NA
	5/5/2005	0.200	0.032	0.180	1.000	NA	NA
CW 1+50	4/6/2006	0.130	0.024	0.120	1.700	<0.050	NA
	8/5/2005	1.000	<0.02	0.200	1.800	NA	NA
L	5/5/2005	1.200	0.041	0.240	2.300	NA	NA
CW 3+85	4/6/2006	0.0120	0.0120	0.0200	0.2200	<0.012	NA
	8/5/2005	0.0045	<0.002	0.0075	0.036	NA	NA
	5/5/2005	0.035	0.022	0.020	0.250	NA	NA
CW 5+50	4/6/2006	0.044	<0.010	0.012	0.15	0.087	NA
	5/5/2005	0.2	0.011	0.064	0.24	NA	NA
CW 6+70	4/6/2006	0.019	<0.002	< 0.002	<0.006	0.11	NA
	5/5/2005	0.0027	<0.005	< 0.005	0.0013	NA	NA
CW 8+10	4/6/2006	0.17	<0.005	0.01	0.11	0.09	NA
4	8/5/2005	0.18	<0.005	0.01	0.21	NA	NA
	5/5/2005	0.43	<0.025	0.05	0.66	NA	NA
CW 11+15	4/6/2006	1.70	<0.020	0.024	0.380	1.200	NA
CW 14+10	4/6/2006	8.80	<0.100	1.10	< 0.300	1.20	NA
	8/5/2005	6.00	<0.100	1.20	0.24	NA	NA
	5/5/2005	9.80	<0.025	2.10	1.30	NA	NA
CW 16+60	4/6/2006	6.30	<0.100	3.10	6.30	7.60	NA
	8/5/2005	6.80	0.065	3.10	7.10	NA	NA
	5/5/2005	5.30	0.075	3.80	7.30	NA	NA
CW 19+50	4/6/2006	4.90	< 0.001	1.30	2.60	80.00	NA
	8/5/2005	6.60	< 0.05	2.80	4.30	NA	NA
	5/5/2005	4.80	0.021	1.70	5.10	NA	NA
CW 22+00	4/6/2006	7.20	< 0.001	<0.001	< 0.003	6.70	NA
	8/5/2005	6.50	<0.10	<0.10	0.15	NA	NA
	5/5/2005	7.00	0.090	0.10	0.20	NA	NA
CW 23+10	4/6/2006	4.20	< 0.010	<0.010	1.1	2.9	NA
	8/5/2005	9.40	0.015	0.42	0.36	NA	NA
· ·	5/5/2005	6.30	0.076	0.19	0.35	NA	NA
CW 23+90	4/6/2006	2.90	<0.100	0.11	< 0.300	0.94	NA
	8/5/2005	3.30	< 0.05	0.17	0.33	NA	NA
	5/5/2005	3.40	0.035	0.17	0.40	NA	NA
CW 25+95	4/6/2006	<0.001	<0.001	<0.001	< 0.003	0.0054	NA
	8/5/2005	0.00059	<0.0005	<0.0005	< 0.0005	NA	NA
	5/5/2005	0.001	<0.0005	<0.0005	<0.0005	NA	NA

### Volatile Organic Analytical Result Summary - North Boundary Barrier Facility-Wide Groundwater Monitoring Plan Bloomfield Refinery - Bloomfield, New Mexico



	[	Parameters					
	ł	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	DRO
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
WQCC 20NMAC 6.2.3103		0.01	0.75	0.75	0.62	NE	NE
Well ID.	(mg/L):		l	l		<u> </u>	L
	Date Sampled:	- 01	0.050	0.007	0.15	< 0.05	
0w 0+00	4///2007	<.01	0.058	0.097	0.15	<.025	NA
	8/21/2006	0.057	0.12	0.31	1.2	<0.025	34
	4/6/2006	0.065	0.033	0.34	1.6	<0.025	110
OW 5+50	4/6/2006	0.015	0.014	0.089	9.7	<0.0025	130
OW 11+15	4/7/2007	0.84	<.02	<.02	<.04	2	NA
	8/21/2006	0.86	< 0.020	0.026	0.096	1.8	16
	4/6/2006	0.23	<0.020	<0.020	<0.060	1.6	15
	8/5/2005	0.75	<0.01	0.12	0.27	NA	NA
	5/5/2005	0.42	<0.025	0.14	0.52	NA	NA
OW 14+10	5/5/2005	10.00	< 0.0005	3.90	3.20	NA	NA
OW 16+60	4/7/2007	3.1	<.05	2.0	7.2	9.0	NA
OW 19+50	4/7/2007	0.0019	<.001	<.001	<.002	0.27	NA
	4/6/2006	0.035	< 0.001	0.012	0.077	0.18	3.4
	8/5/2005	0.0057	<0.0005	0.0011	0.0019	NA	NA
	5/5/2005	1.90	0.013	0.86	3.20	NA	NA
OW 22+00	4/7/2007	< 0.005	<0.005	<0.005	<0.01	2.4	NA
	8/21/2006	< 0.010	0.012	< 0.010	<0.030	3.6	87
	4/6/2006	< 0.001	< 0.001	<0.001	< 0.003	3.9	13
	5/5/2005	3.10	0.045	0.15	0.34	NA	NA
OW 23+10	4/7/2007	< 0.001	0.0071	0.0032	0.0093	0.0400	NA
	8/21/2006	0.015	0.012	0.013	0.27	0.17	290
	4/6/2006	0.026	0.012	0.018	0.18	0.31	20
	8/5/2005	0.53	<0.01	< 0.01	0.047	NA	NA
	5/5/2005	0.34	0.0092	0.011	0.08	NA	NA
OW 23+90	4/7/2007	<0.001	< 0.001	<0.001	<0.002	<0.0025	NA
	8/21/2006	0.0017	0.0024	0.0039	<0.030	0.0034	4.5
	4/6/2006	0.012	0.0032	0.014	0.029	0.034	24
	8/5/2005	0.39	< 0.02	0.03	0.072	NA	NA
	5/5/2005	0.98	0.016	0.031	0.13	NA	NA
OW 25+70	4/7/2007	< 0.001	< 0.001	< 0.001	< 0.002	< 0.0025	NA
	8/21/2006	< 0.001	< 0.001	<0.001	< 0.003	< 0.0025	<1.0
	4/6/2006	< 0.0025	< 0.001	< 0.001	<0.003	< 0.0025	<1.0
	8/5/2005	<0.0005	< 0.0005	< 0.0005	< 0.0005	NA	NA
	5/5/2005	0.00079	< 0.0005	< 0.0005	< 0.0005	NA	NA

Volatile Organic Analytical Result Summary - North Boundary Barrier Facility-Wide Groundwater Monitoring Plan Bloomfield Refinery - Bloomfield, New Mexico

Notes:

mg/L = milligrams per liter

CW = collection well

OW = observation well

NA = not analyzed

NE = not established

MTBE = methyl tertiary butyl ether

DRO = diesel range organics

WQCC 20NMAC 6.2.33103 = New Mexico Standard for Groundwater of 10,000 ug/L or less

	Parameters				
		Benzene	Toluene	Ethylbenzene	Xylenes
		(mg/L)	(mg/L)	(mg/L)	(mg/L)
WQCC 20NMA	0.01	0.75	0.75	0.62	
WQCC 20N	MAC 6.4(mg/L):	0.022	6.8	3.1	NE
Sample ID:	Sample ID: Date Sampled:				_
	10/9/2007	< 0.001	0.0029	< 0.001	0.0039
Outfall #1	11/8/2007	< 0.001	< 0.001	< 0.001	< 0.002
	12/10/2007	< 0.001	< 0.001	< 0.001	< 0.002
	10/9/2007	< 0.001	< 0.001	< 0.001	< 0.002
Outfall #6	11/8/2007	< 0.001	< 0.001	< 0.001	< 0.002
	12/10/2007	< 0.001	< 0.001	< 0.001	< 0.002
	10/9/2007	< 0.001	< 0.001	< 0.001	< 0.002
Outfall #7	11/8/2007	< 0.001	< 0.001	< 0.001	< 0.002
	12/10/2007	< 0.001	< 0.001	< 0.001	< 0.002
	10/9/2007	< 0.001	< 0.001	< 0.001	< 0.002
Outfall #8	11/7/2007	< 0.001	< 0.001	< 0.001	< 0.002
	12/10/2007	< 0.001	< 0.001	< 0.001	< 0.002
	10/9/2007	< 0.001	< 0.001	< 0.001	< 0.002
Outfall #9	11/8/2007	< 0.001	< 0.001	< 0.001	< 0.002
	12/10/2007	< 0.001	< 0.001	< 0.001	< 0.002

# Analytical Results Summary Table - Bluff Seeps / Outfalls Bloomfield Refinery - Bloomfield, New Mexico

#### Notes:

mg/L = milligram per liter

NE = not established

WQCC 20NMAC 6.2.33103 = New Mexico Standard for Groundwater of 10,000 ug/L or less WQCC 20NMAC 6.4 = New Mexico Standards for Interstate and Intrastate Surface Water





# ANNUAL DATA REPORT

# FORMER GIANT BLOOMFIELD REFINERY

# GIANT INDUSTRIES ARIZONA, INC.

March 2007

Prepared By:

PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

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# TABLE OF CONTENTS

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1.0	INTRODUCTION AND METHODOLOGY	1
2.0	SAMPLING PROGRAM	4
3.0	ANNUAL ANALYTICAL RESULTS	8
4.0	WATER AND PRODUCT LEVELS 4	4
5.0	TOTAL VOLUME HISTORY5	;2
6.0	FIGURES	4

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# **1.0 INTRODUCTION AND METHODOLOGY**

### Introduction

The following annual report describes work completed at Giant Industries Arizona, Inc.'s (Giant's) former refinery in Bloomfield, New Mexico since the previous annual report submitted in March 2006. The report contains data collected during that time including:

- Analytical data from groundwater sampling;
- Groundwater elevations;
- Product levels from monitoring wells;
- Tank volume data.

The refinery is located in the NW ¼ of Section 27 and the SW ¼ of Section 22, Township 29 N, Range 12W in San Juan County, New Mexico. It is on the corner of Highway 64 and County Road 350, approximately 5 miles west of the town of Bloomfield, New Mexico (Figure 1). The facility consists of the former Giant Bloomfield Refinery and associated remedial equipment both within and south of the refinery boundary. The refinery operated from 1974 to 1982 and is presently inactive.

A remedial system was installed in stages beginning in 1988 and gradually has been simplified over time. Remediation was designed to treat groundwater affected by various releases during operation of the former refinery and periodic spills at the truck unloading facility. It consists of a series of groundwater monitoring wells, groundwater recovery wells, water treatment facilities and treated water infiltration trenches (Figure 2). The system processed approximately 4,311,691 gallons of water in 2006.

### Methodology

Impacted groundwater is pumped from the aquifer through a series of recovery wells located strategically within the affected area. Recovery wells are utilized to create a hydraulic barrier and prevent migration of affected water beyond the well. A hydraulic barrier is formed as water is pumped through the recovery well, thereby depressing the water table. Figure 3 illustrates the concept. Sufficient recovery wells are placed

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throughout the site so that the radii of influence from adjacent wells overlap, and a barrier is formed across the plume to prevent migration of affected water.

Impacted groundwater is collected in a storage tank (Tank 102) and subsequently treated. The method of treatment used at the Giant Bloomfield Refinery is carbon adsorption, where recovered water is pumped into a carbon filtration tank. Inside, volatile and nonvolatile organic compounds are adsorbed into a carbon matrix lining the tank.

The treated water is discharged into the aquifer through an infiltration trench. The infiltration trench consists of a subsurface distribution system placed within gravel packs. Water infiltrates the surrounding strata and eventually makes its way back to the aquifer. The return of recovered water to the aquifer serves as a recharge mechanism. Figure 4 is a simplified diagram representation of groundwater recovery, treatment and disposal at the former refinery.

Monitoring at the site consists of regular inspections and maintenance of facilities, as well as regular sampling of groundwater on site. Section 2 describes the sampling program at the site. Results are presented in Section 3. Numerous monitoring wells are located within and south of the refinery (Figure 2). Analytical results of groundwater samples collected from monitoring wells help determine the effectiveness and progress of remedial efforts. In addition to sampling, water and product levels in each well are determined quarterly. This information is tabulated and utilized to prepare potentiometric surface maps. Water levels are included in Section 4. Product levels are also shown. Figures 5-8 are potentiometric surface of the groundwater for each quarter. The maps are useful in determining direction of groundwater flow and effectiveness of hydraulic control achieved by the recovery well system. Additionally, oil absorbent socks are installed in all monitoring wells showing free-phase hydrocarbons. These socks are checked quarterly and replaced as necessary.

Regular weekly inspections are performed to assure safe and efficient operation of the remediation system. The Control Panel, located in the Dispatch Office, serves to monitor and control the operation of the treatment system, while providing alarm and shutdown functions to safeguard against spills and other undesirable events. The Control Panel is checked weekly. An inspection is also made in the control building at Tank 102, the southern infiltration gallery and each recovery well. Treated effluent volumes and flow rates are monitored weekly with a water meter that has been installed near the carbon

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adsorption tank. These values are recorded and compared with previous readings to ensure normal operation. Maintenance of the system includes replacement of filters in well houses, equipment lubrication, air compressor oil changes, adding nutrients as necessary, listening for unusual pump and motor noise, inspecting the carbon pre-filter and repairing all equipment as required. Observations are recorded in a bound field logbook with the date, time and person recording the information noted. All equipment is inspected for leaks and malfunctions. The operator is familiar with the location of underground lines and notes any surface indication of underground leaks. Leaks of any size are noted and repaired.

#### Modifications to the Treatment System

In 2005, Giant Industries requested approval from the New Mexico Oil Conservation Division (NMOCD) to plug and abandon nine groundwater monitoring wells and one groundwater recovery well located down gradient of the refinery. The NMOCD has not formally responded to this proposal. Subsequently, Giant submitted a revised sample schedule in Discharge Plan GW040 in 2006 and an amended Discharge Plan GW040 in 2007 to remove the wells listed below from the sampling matrix and discontinue pumping well SHS-14 based on the number of clean reporting quarters, as noted below:

Type of Well	Identification	Years of Monitoring Beneath Standards
Monitoring	SHS-3	7
Monitoring	SHS-4	8
Monitoring	SHS-6	8
Monitoring	SHS-10	8
Monitoring	SHS-12	8
Monitoring	SHS-13	8
Recovery	SHS-14	3
Monitoring	SHS-15	8
Monitoring	SHS-16	8
Monitoring	SHS-17	7

The wells listed above were sampled in the first quarter of 2006. The revised sampling schedule was instituted in October of 2006. They will not be sampled in 2007.

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# 2.0 SAMPLING PROGRAM

### Introduction

Table 1 describes water sampling conducted at the Giant Bloomfield Refinery. Influent and effluent water quality is monitored to verify compliance with New Mexico Water Quality Control Commission (NMWQCC) standards. System influent and effluent is sampled and analyzed for general chemistry, halocarbons and aromatics on a quarterly basis throughout the year. Facility effluent is also sampled annually for PAHs and metals. Recovery and monitoring wells are sampled as shown in Table 1.

### Methodology

Influent water is collected from a system valve prior to entering storage Tank 102. Samples of effluent water are collected through a sample valve as treated water exits the carbon adsorption tank. Water is collected in appropriate pre-cleaned and/or prepreserved sample bottles or glass vials. For EPA methods 601 and 602 analyses, vials are filled and capped with no air inside to prevent degradation of the sample. Samples are labeled with the date and time of collection, sample designation, project name, collector's name and parameters to be analyzed. They are immediately sealed and packed on ice. The samples are shipped to Pinnacle Laboratories in Albuquerque, NM in a sealed cooler via UPS before designated holding times expire. Proper chain-of-custody (COC) procedures are followed with logs documenting the date and time sampled, sample number, type of sample, sampler's name, preservative used, analyses required and sampler's signatures.

Prior to sampling monitoring and wells, depth to ground water and total depth of wells is measured with a Keck oil/water interface probe. Presence of any free-phase crude oil is also investigated using the interface probe. The interface probe is decontaminated with  $Alconox^{TM}$  soap and rinsed with de-ionized water prior to each measurement. The volume of water in the wells is calculated, and a minimum of three casing volumes of water is purged from each well using a disposable bailer or a permanent decontaminated PVC bailer. As water is extracted, pH, electric conductivity and temperature are monitored. Wells are purged until these properties stabilize or the well bails dry, indicating that the purge water is representative of aquifer conditions. Stabilization is

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defined as three consecutive stable readings for each water property ( $\pm 0.4$  units for pH,  $\pm 10$  percent for electric conductivity and  $\pm 2^{\circ}$  C for temperature). Once each monitoring well is properly purged, groundwater samples are collected in bottles or vials and shipped to the laboratory as described above. The method for sampling recovery wells is similar, the difference being that pumps installed within the wells are used to purge groundwater.

[			SEMI-	
LOCATION	MONTHLY	QUARTERLY	ANNUALLY	ANNUALLY
System Influent		601	601	601
		602	602	602
		GWC	GWC	GWC
System Effluent		601	601	601
		602	602	602
		GWC	GWC	GWC
				Metals
				PAH
GRW-3				601
				602
				GWC
				PAH
GRW-6				601
				602
				GWC
				PAH
GBR-17				601
				602
				GWC
			i	PAH
GBR-24D	İ			601
				602
			ļ	GWC
L				PAH
GBR-30				601
				602
				GWC
				PAH
GBR-31				601
				602
				GWC
				PAH

#### Table 1. Giant Industries, Inc. Bloomfield Refinery Sample Schedule for 2006

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8

[			SEMI-	
LOCATION	MONTHLY	QUARTERLY	ANNUALLY	ANNUALLY
SHS-4*				601
				602
				GWC
SHS-6*				601
				602
				GWC
SHS-10*				601
			i	602
				GWC
SHS-12*				601
				602
				GWC
SHS-13*				601
]				602
				GWC
SHS-14*				601
				602
				GWC
SHS-15*				601
				602
				GWC
SHS-16*		8		601
	]			602
				GWC
SHS-17*				601
				602
				GWC
SHS-19				601
				602
			·	GWC
SHS-18				601
				602
		· · · · · · · · · · · · · · · · · · ·		GWC
GBR-51				601
				602
0000				GWC
GBR-52				601
				602
				GWC
GBR-32				601
				602

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			SEMI-					
LOCATION	MONTHLY	QUARTERLY	ANNUALLY	ANNUALLY				
				GWC				
				Metals				
GBR-48				601				
				602				
				GWC				
				Metals				
GBR-49				601				
				602				
				GWC				
				Metals				
GBR-50				601				
				602				
				GWC				
				Metals				
NOTES:								
*Wells will be removed from the sampling schedule in 2007 as described in Section 1.0.								

All wells have water and free product elevations determined on a quarterly basis. Wells exhibiting free product are not sampled.

601 and 602 refer to United States Environmental Protection Agency methods for organic chemical analysis.

GWC refers to groundwater characteristics.

### **3.0 ANNUAL ANALYTICAL RESULTS**

Lab results detailing the quality of groundwater sampled at the Giant Bloomfield Refinery is shown in Table 2. Raw data, as received from the laboratory, is available on request as a supplement to the annual report. Toxic pollutants, as defined by WQCC standards, are absent from influent and effluent water. Results indicate most analytes are not detected. When constituents are present, they are detected only in trace amounts.

The analytical results presented in Table 2 are listed in units as described below:

	<u>Unit of Measure</u>
Total dissolved solids (180)	mg/l
Total dissolved solids (calc)	mg/l
Total alkalinity as CaCO3	mg/l
Total hardness as CaCO3	mg/l
Bicarbonate as HCO3	mg/l
Carbonate as CO3	mg/l
Chloride	mg/l
Sulfate	mg/l
Calcium	mg/l
Magnesium	mg/l
Potassium	mg/l
Sodium	mg/l
Laboratory Conductivity	µmhos/cm

The remainder of the data is measured in  $\mu g/l$ .

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	JAN*	APR	JUL	OCT	DEC
SYSTEM EFFLUENT					
Lab pH	7.4	7.2	7.3	7.1	
Lab Conductivity@25C	3160	3290	2430	3310	
Total Dissolved Solids (Calc)	2450	2420	3140	2620	
Total Alkalinity as CaCO3	336	337	566	300	
Total Hardness as CaCO3	851	730	629	960	
Bicarbonate as HCO3	335	334	566	300	
Carbonate as CO3	1.58	12	nd	nd	
Hydroxide	nd	nd	nd	nd	
Chloride	348	106	67.1	75	
Sulfate	1490	1300	1110	1300	
Calcium	352	292	242	339	
Magnesium	31.9	26.1	23.2	27.3	
Potassium	7.49	5.89	4.39	7.82	<sup>11</sup>
Sodium	456	367	404	375	
HALOCARBONS					
Bromodichloromethane	nd	nd	nd	nd	
Bromoform	nd	nd	nd	nd	
Bromomethane	nd	nd	nd	nd	
Carbon Tetrachloride	nd	nd	nd	nd	······
Chloroethane	nd	nd	nd	nd	
Chloroform	nd	nd	nd	nd	
Chloromethane	nd	nd	nd	nd	
Dibromochloromethane	nd	nd	nd	nd	
1,2-Dibromomethane (EDB)	nd	nd	nd	nd	
1,2-Dichlorobenzene	nd	nd	nd	nd	<u></u>
1,3-Dichlorobenzene	nd	nd	rnd	nd	
1,4-Dichlorobenzene	nd	nd	nd	nd	
1,1-Dichloroethane	nd	nd	nd	nd	
1,2-Dichloroethane (EDC)	nd	nd	nd	nd	
1,1-Dichoroethene	nd	nd	nd	nd	
trans-1,2-Dichloroethene	nd	nd	nd	nd	
1,2-Dichloropropane	nd	nd	nd	nd	
cis-1,3-Dichloropropene	nd	nd	nd	nd	
trans-1,3-Dichloropropene	nd	nd	nd	nd	
Methylene Chloride	nd	nd	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	nd	nd	
Tetrachloroethane	nd	nd	nd	nd	

### Table 2. Giant Industries, Inc. Bloomfield Refinery 2006 Annual Analytical Data

	JAN*	APR	JUL	OCT	DEC
1,1,1-Trichloroethane	nd	nd	nd	nd	
1,1,2-Trichloroethane	nd	nd	nd	nd	
Trichloroethene	nd	nd	nd	nd	
Trichlorofluoromethane	nd	nd	nd	nd	
Vinyl Chloride	nd	nd	nd	nd	
AROMATICS					
Benzene	nd	nd	nd	nd	
Chlorobenzene	nd	nd	nd	nd	
1,2-Dichlorobenzene	nd	nd	nd	nd	
1,3-Dichlorobenzene	nd	nd	nd	nd	
1,4-Dichlorobenzene	nd	nd	nd	nd	
Ethylbenzene	nd	nd	nd	nd	
Methyl-t-Butyl Ether	nd	nd	nd	nd	
Toluene	nd	nd	nd	nd	
Total Xylenes	nd	nd	nd	nd	
РАН					
1-Methylnapthalene	0.760				
2-Methylnapthalene	nd				
Benzo(a)pyrene	nd				
Napthalene	nd				
METALS (mg/l)					
Antimony	nd				
Arsenic	nd				
Beryllium	nd				
Cadmium	nd				
Chromium	0.003				
Copper	0.019				
Lead	nd				
Nickel	0.018				
Selenium	nd				
Silver	nd				
Thallium	nd				
Zinc	nd	-			
Mercury	nd				
SYSTEM INFLUENT					
Lab pH	7.5	7.1	7.3	6.4	
Lab Conductivity@25C	3250	3350	3410	3380	

	JAN*	APR	JUL	OCT	DEC
Total Dissolved Solids (Calc)	2460	2420	2360	2580	
Total Alkalinity as CaCO3	311	359	515	297	
Total Hardness as CaCO3	851	795	669	970	
Bicarbonate as HCO3	309	356	515	297	
Carbonate as CO3	1.88	14.4	nd	nd	
Hydroxide	nd	nd	nd	nd	
Chloride	681	141	59.9	74	,
Sulfate	1440	1290	1060	1300	
Calcium	331	318	235	343	
Magnesium	29.9	28.2	24.4	27.7	
Potassium	7.43	4.05	12.7	8.29	
Sodium	428	390	428	374	
				<b></b>	
HALOCARBONS					
Bromodichloromethane	nd	nd	nd	nd	
Bromoform	nd	nd	nd	nd	 
Bromomethane	nd	nd	nd	nd	
Carbon Tetrachloride	nd	nd	nd	nd	
Chloroethane	nd	nd	nd	nd	
Chloroform	nd	nd	nd	nd	
Chloromethane	nd	nd	nd	nd	
Dibromochloromethane	nd	nd	nd	nd	
1,2-Dibromomethane (EDB)	nd	nd	nd	nd	
1,2-Dichlorobenzene	nd	nd	nd	nd	
1,3-Dichlorobenzene	nd	nd	nd	nd	······
1,4-Dichlorobenzene	nd	nd	nd	nd	
1,1-Dichloroethane	nd	nd	nd	nd	
1,2-Dichloroethane (EDC)	nd	nd	nd	nd	
1,1-Dichoroethene	nd	nd	nd	nd	
trans-1,2-Dichloroethene	nd	nd	nd	nd	
1,2-Dichloropropane	nd	nd	nd	nd	
cis-1,-Dichloropropene	nd	nd	nd	nd	
trans-1,2-Dichloropropene	nd	nd	nd	nd	
Methylene Chloride	nd	nd	nd	nd	
1,1,2,2-Tetrachloroethane	nd	nd	nd	nd	
Tetrachloroethane	nd	nd	nd	nd	
1,1,1-Trichloroethane	nd	nd	nd	nd	
1,1,2-Trichloroethane	nd	nd	nd	nd	
Trichloroethene	nd	nd	nd	nd	
Trichlorofluoromethane	nd	nd	nd	nd	
Vinyl Chloride	nd	nd	nd	nd	

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	JAN*	APR	JUL	OCT	DEC
AROMATICS					
Benzene	nd	nd	nd	nd	
Chlorobenzene	nd	nd	nd	nd	
1,2-Dichlorobenzene	nd	nd	nd	nd	
1,3-Dichlorobenzene	nd	nd	nd	nd	
1,4-Dichlorobenzene	nd	nd	nd	nd	
Ethylbenzene	nd	nd	nd	nd	
Methyl-t-Butyl Ether	nd	nd	nd	nd	
Toluene	nd	nd	nd	nd	
Total Xylenes	nd	nd	nd	nd	
<u>GRW-3</u>					
Lab pH	7.2				
Lab Conductivity@25C	3150				
Total Dissolved Solids (Calc)	2310				
Total Alkalinity as CaCO3	571				
Total Hardness as CaCO3	614				
Bicarbonate as HCO3	569				
Carbonate as CO3	2.38				
Hydroxide	nd				
Chloride	303				
Sulfate	1270				
Calcium	202				
Magnesium	21.1				
Potassium	3.92				
Sodium	484				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				

	JAN*	APR	JUL	OCT	DEC
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				'
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	2.6				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	nd				
РАН					
1-Methylnapthalene	16.5				
2-Methylnapthalene	20.2				
Benzo(a)pyrene	nd				
Napthalene	24.8				
GRW-6					
Lab pH	7.3				
Lab Conductivity@25C	2690				
Total Dissolved Solids (Calc)	960				
Total Alkalinity as CaCO3	588				
Total Hardness as CaCO3	594				
Bicarbonate as HCO3	584				
Carbonate as CO3	3.82				

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	JAN*	APR	JUL	OCT	DEC
Hydroxide	nd				
Chloride	259				
Sulfate	902				
Calcium	196				
Magnesium	29.9				
Potassium	4.12				
Sodium	447				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	0.7				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				

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	JAN*	APR	JUL	OCT	DEC
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	0.6				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	nd				
РАН					
1-Methylnapthalene	nd				
2-Methylnapthalene	nd				
Benzo(a)pyrene	nd				
Napthalene	nd				
<u>GBR-17</u>					
Lab pH					7.0
Lab Conductivity@25C					2500
Total Dissolved Solids (Calc)					2000
Total Alkalinity as CaCO3					164
Total Hardness as CaCO3					696
Bicarbonate as HCO3	_				163
Carbonate as CO3					nd
Hydroxide					nd
Chloride					48
Sulfate					1400
Calcium					273
Magnesium					22.6
Potassium					7.27
Sodium					222
HALOCARBONS					
Bromodichloromethane					nd
Bromoform					nd
Bromomethane					nd
Carbon Tetrachloride					nd
Chloroethane					nd
Chloroform					nd
Chloromethane					nd
Dibromochloromethane					nd
1,2-Dibromomethane (EDB)					nd
1,2-Dichlorobenzene					nd
1,3-Dichlorobenzene					nd

[	JAN*	APR	JUL	OCT	DEC
1,4-Dichlorobenzene					nđ
1,1-Dichloroethane					nd
1,2-Dichloroethane (EDC)				##### 6 con	nd
1,1-Dichoroethene					nd
trans-1,2-Dichloroethene					nd
1,2-Dichloropropane					nđ
cis-1,-Dichloropropene					nd
trans-1,2-Dichloropropene					nd
Methylene Chloride					nd
1,1,2,2-Tetrachloroethane			-		nd
Tetrachloroethane					nd
1,1,1-Trichloroethane					nd
1,1,2-Trichloroethane					nd
Trichloroethene					nd
Trichlorofluoromethane					nd
Vinyl Chloride			_		nd
AROMATICS					
Benzene					nd
Chlorobenzene					nd
1,2-Dichlorobenzene					nd
1,3-Dichlorobenzene					nd
1,4-Dichlorobenzene					nd
Ethylbenzene					nd
Methyl-t-Butyl Ether					nd
Toluene					nd
Total Xylenes					nd
<u>GBR-24D</u>					
Lab pH	7.5				
Lab Conductivity@25C	4090				
Total Dissolved Solids (Calc)	3300				
Total Alkalinity as CaCO3	259				
Total Hardness as CaCO3	1270				
Bicarbonate as HCO3	258				
Carbonate as CO3	1.78				
Hydroxide	nd				
Chloride	374				
Sulfate	1560				
Calcium	144				
Magnesium	46.5				

	JAN*	APR	JUL	ΟСΤ	DEC
Potassium	10.4				
Sodium	563				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd	L			
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	0.7				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	0.3				
1,2-Dichloroethane (EDC)	5.6				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd	······································			
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	0.7				
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				
Toluene	nd				

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	JAN*	APR	JUL	OCT	DEC
Total Xylenes	nd				
РАН					
1-Methylnapthalene	nd				
2-Methylnapthalene	nd				
Benzo(a)pyrene	nd				
Napthalene	nd				
<u>GBR-30</u>					
Lab pH	6.9				
Lab Conductivity@25C	3790				
Total Dissolved Solids (Calc)	3120				
Total Alkalinity as CaCO3	218				
Total Hardness as CaCO3	1310				
Bicarbonate as HCO3	218				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	322				
Sulfate	1760				
Calcium	469				
Magnesium	45.7				
Potassium	9.22				
Sodium	464				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd		{		
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				

	JAN*	APR	JUL	OCT	DEC
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	0.8				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				· ·
Toluene	nd				
Total Xylenes	nd				
РАН					
I-Methylnapthalene	nd				
2-Methylnapthalene	nd				
Benzo(a)pyrene	nd				
Napthalene	nd				
<u>GBR-31</u>					
Lab pH	7.1				
Lab Conductivity@25C	3200				
Total Dissolved Solids (Calc)	2760				
Total Alkalinity as CaCO3	177				
Total Hardness as CaCO3	1030				
Bicarbonate as HCO3	176				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	162				
Sulfate	1770				
Calcium	412				

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	JAN*	APR	JUL	OCT	DEC
Magnesium	35.4				
Potassium	6.14				
Sodium	423				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd			ŀ	
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				······
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				

	JAN*	APR	JUL	OCT	DEC
Toluene	nd				
Total Xylenes	nd				
РАН					
1-Methylnapthalene	nd				
2-Methylnapthalene	nd				
Benzo(a)pyrene	nd				
Napthalene	nd				
<b>GBR-32</b>					
Lab pH					7.2
Lab Conductivity@25C					5480
Total Dissolved Solids (Calc)					3880
Total Alkalinity as CaCO3		-			228
Total Hardness as CaCO3					962
Bicarbonate as HCO3					227
Carbonate as CO3					nd
Hydroxide					nd
Chloride					480
Sulfate					1800
Calcium					363
Magnesium					39.5
Potassium					10.1
Sodium					564
HALOCARBONS					
Bromodichloromethane					nd
Bromoform					nd
Bromomethane					nd
Carbon Tetrachloride					nd
Chloroethane					nd
Chloroform					nd
Chloromethane					nd
Dibromochloromethane					nd
1,2-Dibromomethane (EDB)					nd
1,2-Dichlorobenzene					nd
1,3-Dichlorobenzene					nd
1,4-Dichlorobenzene					nd
1,1-Dichloroethane					nd
1,2-Dichloroethane (EDC)					nd
1,1-Dichoroethene					nd

「 <u> </u>	JAN*	APR	JUL	OCT	DEC
trans-1,2-Dichloroethene					nd
1,2-Dichloropropane					nd
cis-1,-Dichloropropene					nd
trans-1,2-Dichloropropene					nd
Methylene Chloride					nd
1,1,2,2-Tetrachloroethane					nd
Tetrachloroethane					nd
1,1,1-Trichloroethane					nd
1,1,2-Trichloroethane					nd
Trichloroethene					nd
Trichlorofluoromethane					nd
Vinyl Chloride					nd
AROMATICS					
Benzene					nd
Chlorobenzene					nd
1,2-Dichlorobenzene					nd
1,3-Dichlorobenzene					nd
1,4-Dichlorobenzene					nd
Ethylbenzene					nd
Methyl-t-Butyl Ether					nd
Toluene					nd
Total Xylenes					nd
METALS		· ·			
Calcium					363
Magnesium					39.5
Potassium			······		10.1
Sodium					564
Iron					1.24
Mangenese					1.04
<u>GBR-48</u>					
Lab pH					7.1
Lab Conductivity@25C					2700
Total Dissolved Solids (Calc)					1850
Total Alkalinity as CaCO3					176
Total Hardness as CaCO3					458
Bicarbonate as HCO3					175
Carbonate as CO3					nd
Hydroxide					nd

	JAN*	APR	JUL	OCT	DEC
Chloride					140
Sulfate					820
Calcium					174
Magnesium					18.1
Potassium			T		7.27
Sodium		ļ			293
HALOCARBONS					
Bromodichloromethane					nd
Bromoform					nd
Bromomethane					nd
Carbon Tetrachloride					nd
Chloroethane					nd
Chloroform					nd
Chloromethane					nd
Dibromochloromethane					nd
1,2-Dibromomethane (EDB)					nd
1,2-Dichlorobenzene		·····			nd
1,3-Dichlorobenzene					nd
1,4-Dichlorobenzene					nd
1,1-Dichloroethane					nd
1,2-Dichloroethane (EDC)					nd
1,1-Dichoroethene					nd
trans-1,2-Dichloroethene					nd
1,2-Dichloropropane					nd
cis-1,-Dichloropropene					nd
trans-1,2-Dichloropropene					nd
Methylene Chloride					nd
1,1,2,2-Tetrachloroethane					nd
Tetrachloroethane					nd
1,1,1-Trichloroethane					nd
1,1,2-Trichloroethane					nd
Trichloroethene					nd
Trichlorofluoromethane					nd
Vinyl Chloride					nd
AROMATICS					
Benzene					nd
Chlorobenzene					nd
1,2-Dichlorobenzene					nd
1,3-Dichlorobenzene					nd

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	JAN*	APR	JUL	OCT	DEC
1,4-Dichlorobenzene					nd
Ethylbenzene					nd
Methyl-t-Butyl Ether					nd
Toluene					nd
Total Xylenes					nd
METALS					
Calcium					174
Magnesium					18.1
Potassium					7.27
Sodium					293
Iron					7.77
Mangenese					0.457
<b>GBR-49</b>					
Lab pH					6.4
Lab Conductivity@25C					4520
Total Dissolved Solids (Calc)					3460
Total Alkalinity as CaCO3					112
Total Hardness as CaCO3					1060
Bicarbonate as HCO3					112
Carbonate as CO3					nd
Hydroxide					nd
Chloride					280
Sulfate					2200
Calcium					406
Magnesium					38.8
Potassium					13.5
Sodium					495
HALOCARBONS					
Bromodichloromethane					nd
Bromoform					nd
Bromomethane					nd
Carbon Tetrachloride					nd
Chloroethane					nd
Chloroform					nd
Chloromethane					nd
Dibromochloromethane					nd
1,2-Dibromomethane (EDB)					nd
1,2-Dichlorobenzene					nd 🕯

	JAN*	APR	JUL	OCT	DEC
1,3-Dichlorobenzene					nd
1,4-Dichlorobenzene					nd
1,1-Dichloroethane					nd
1,2-Dichloroethane (EDC)					nd
1,1-Dichoroethene					nd
trans-1,2-Dichloroethene					nd
1,2-Dichloropropane					nd
cis-1,-Dichloropropene					nd
trans-1,2-Dichloropropene					nd
Methylene Chloride					nd
1,1,2,2-Tetrachloroethane					nd
Tetrachloroethane					0.6
1,1,1-Trichloroethane					nd
1,1,2-Trichloroethane					nd
Trichloroethene					nd
Trichlorofluoromethane					nd
Vinyl Chloride					nd
AROMATICS					
Benzene					5.4
Chlorobenzene					nd
1,2-Dichlorobenzene					nd
1,3-Dichlorobenzene					nd
1,4-Dichlorobenzene					nd
Ethylbenzene					nd
Methyl-t-Butyl Ether					nd
Toluene					nd
Total Xylenes					nd
METALS					
Calcium					406
Magnesium					38.8
Potassium					13.5
Sodium					495
Iron					120
Mangenese					5.91
<u>GBR-50</u>					
Lab pH					6.7
Lab Conductivity@25C					3510
Total Dissolved Solids (Calc)					2600

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	JAN*	APR	JUL	OCT	DEC
Total Alkalinity as CaCO3					225
Total Hardness as CaCO3					956
Bicarbonate as HCO3					224
Carbonate as CO3					nd
Hydroxide					nd
Chloride				·	61
Sulfate					1700
Calcium		~			378
Magnesium					5.73
Potassium					326
Sodium					
HALOCARBONS					nd
Bromodichloromethane					nd
Bromoform					nd
Bromomethane					nd
Carbon Tetrachloride					nd
Chloroethane					nd
Chloroform					nd
Chloromethane					nd
Dibromochloromethane					nd
1,2-Dibromomethane (EDB)					nd
1,2-Dichlorobenzene					nd
1,3-Dichlorobenzene					nd
1,4-Dichlorobenzene					nd
1,1-Dichloroethane					nd
1,2-Dichloroethane (EDC)					nd
1,1-Dichoroethene					nd
trans-1,2-Dichloroethene					nd
1,2-Dichloropropane					nd
cis-1,-Dichloropropene					nd
trans-1,2-Dichloropropene					nd
Methylene Chloride					nd
1,1,2,2-Tetrachloroethane					nd
Tetrachloroethane					nd
1,1,1-Trichloroethane					nd
1,1,2-Trichloroethane					nd
Trichloroethene			["		nd
Trichlorofluoromethane					nd
Vinyl Chloride					nd

	JAN*	APR	JUL	OCT	DEC
AROMATICS					
Benzene					nd
Chlorobenzene					nd
1,2-Dichlorobenzene					nd
1,3-Dichlorobenzene					nd
1,4-Dichlorobenzene					nd
Ethylbenzene					nd
Methyl-t-Butyl Ether					nd
Toluene					nd
Total Xylenes					nd
METALS					
Calcium					378
Magnesium					28.9
Potassium					9.04
Sodium					326
Iron					5.73
Mangenese	• ··· =				0.373
<u>GBR-51</u>					
Lab pH	7.3				
Lab Conductivity@25C	3160				
Total Dissolved Solids (Calc)	2540				
Total Alkalinity as CaCO3	203				
Total Hardness as CaCO3	1130				
Bicarbonate as HCO3	202				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	164				
Sulfate	1580				
Calcium	420				
Magnesium	33.6				
Potassium	4.52				
Sodium	318				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				

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	JAN*	APR	JUL	OCT	DEC
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	5.2				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	nd				
<u>GBR-52</u>					
Lab pH	6.8				
Lab Conductivity@25C	3310				
Total Dissolved Solids (Calc)	2780				
Total Alkalinity as CaCO3	159				
Total Hardness as CaCO3	1190				

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	JAN*	APR	JUL	OCT	DEC
Bicarbonate as HCO3	158				
Carbonate as CO3	1.23				
Hydroxide	nd				
Chloride	179				
Sulfate	1710				
Calcium	477				
Magnesium	38.6				
Potassium	5.61				
Sodium	335				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
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AROMATICS					
Benzene	nd				

	JAN*	APR	JUL	ОСТ	DEC
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	nd				
<u>SHS-4</u>					
Lab pH	7.4				
Lab Conductivity@25C	3180				
Total Dissolved Solids (Calc)	2750				
Total Alkalinity as CaCO3	69.5				
Total Hardness as CaCO3	1250				
Bicarbonate as HCO3	69.5				-
Carbonate as CO3	nd			-	
Hydroxide	nd				
Chloride	71				
Sulfate	1590				
Calcium	433				
Magnesium	36.6				
Potassium	8.9				
Sodium	311				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				

	JAN*	APR	JUL	OCT	DEC
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				
Toluene	nd				-
Total Xylenes	nd				
<u>SHS-6</u>					
Lab pH	7.3				
Lab Conductivity@25C	3080				
Total Dissolved Solids (Calc)	2490				
Total Alkalinity as CaCO3	52.9				
Total Hardness as CaCO3	1250				
Bicarbonate as HCO3	52.9				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	208				
Sulfate	1470				
Calcium	377				
Magnesium	31.6				
Potassium	7.34				
Sodium	304				
HALOCARBONS					

	JAN*	APR	JUL	OCT	DEC
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd		_		
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	nd				
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<u>SHS-19</u>					
Lab pH	7.4				

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	JAN*	APR	JUL	OCT	DEC
Lab Conductivity@25C	2600				
Total Dissolved Solids (Calc)	1730				
Total Alkalinity as CaCO3	616				
Total Hardness as CaCO3	634	_			
Bicarbonate as HCO3	615				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	160				
Sulfate	646				
Calcium	166				
Magnesium	23.1				
Potassium	4.32				
Sodium	361				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				· · · ·
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				

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	JAN*	APR	JUL	OCT	DEC
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	0.5				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	nd				
<u>SHS-10</u>					· · · · · · · · · · · · · · · · · · ·
Lab pH	7.2				
Lab Conductivity@25C	2920				
Total Dissolved Solids (Calc)	2350				
Total Alkalinity as CaCO3	203				
Total Hardness as CaCO3	921				· · · · ·
Bicarbonate as HCO3	203				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	255				
Sulfate	1260				
Calcium	288				
Magnesium	58.1				
Potassium	11.1				
Sodium	. 339				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				

	JAN*	APR	JUL	OCT	DEC
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				· · · · · · · · · · · · · · · · · · ·
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	1.0				
<u>SHS-12</u>					
Lab pH	7.2				
Lab Conductivity@25C	3140				
Total Dissolved Solids (Calc)	2270				
Total Alkalinity as CaCO3	310				
Total Hardness as CaCO3	792				
Bicarbonate as HCO3	310				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	182				
Sulfate	1080				
Calcium	316				
Magnesium	25.7				

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	JAN*	APR	JUL	OCT	DEC
Potassium	8.98				
Sodium	440				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				
Toluene	nd				

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	JAN*	APR	JUL	OCT	DEC
Total Xylenes	nd				
<u>SHS-13</u>					
Lab pH	7.0				
Lab Conductivity@25C	3800				
Total Dissolved Solids (Calc)	3150				
Total Alkalinity as CaCO3	349				
Total Hardness as CaCO3	1780				
Bicarbonate as HCO3	349				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	275				
Sulfate	1450				
Calcium	518				
Magnesium	50.0				
Potassium	6.98				
Sodium	364				
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HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	1.2				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				

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	JAN*	APR	JUL	OCT	DEC
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd	· ·			
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	nd				
<u>SHS-14</u>					
Lab pH	7.5				
Lab Conductivity@25C	2500				
Total Dissolved Solids (Calc)	1970				
Total Alkalinity as CaCO3	235				
Total Hardness as CaCO3	990				
Bicarbonate as HCO3	235				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	183				
Sulfate	1040				
Calcium	330				
Magnesium	36				
Potassium	6.92				
Sodium	229				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				

	JAN*	APR	JUL	ОСТ	DEC
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd			_	
1,3-Dichlorobenzene	nd			_	
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	nd			_	
SHS-15					
Lab pH	7.3				
Lab Conductivity@25C	2280				
Total Dissolved Solids (Calc)	1750				
Total Alkalinity as CaCO3	88				
Total Hardness as CaCO3	792				
Bicarbonate as HCO3	88				
Carbonate as CO3	nd				
Hydroxide	nd				

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	JAN*	APR	JUL	OCT	DEC
Chloride	123				
Sulfate	1010				
Calcium	295				
Magnesium	29.4				
Potassium	6.2				
Sodium	196				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				·····
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				· · · · · · · · · · · · · · · · · · ·
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				
trans-1,2-Dichloropropene	nd				
Methylene Chloride	nd				
1,1,2,2-Tetrachloroethane	nd				
Tetrachloroethane	nd				·····
1,1,1-Trichloroethane	nd				
1,1,2-Trichloroethane	nd				
Trichloroethene	nd				
Trichlorofluoromethane	nd				
Vinyl Chloride	nd				
AROMATICS					
Benzene	nd				
Chlorobenzene	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				

	JAN*	APR	JUL	OCT	DEC
1,4-Dichlorobenzene	nd				
Ethylbenzene	nd				
Methyl-t-Butyl Ether	nd				
Toluene	nd				
Total Xylenes	nd				
SHS-16					
Lab pH	7.3				
Lab Conductivity@25C	2480				
Total Dissolved Solids (Calc)	2150				
Total Alkalinity as CaCO3	174				
Total Hardness as CaCO3	1270				
Bicarbonate as HCO3	174				
Carbonate as CO3	nd				
Hydroxide	nd				
Chloride	148				
Sulfate	1130				
Calcium	504				
Magnesium	46.7				
Potassium	12.7				
Sodium	210				
HALOCARBONS					
Bromodichloromethane	nd				
Bromoform	nd				
Bromomethane	nd				
Carbon Tetrachloride	nd				
Chloroethane	nd				
Chloroform	nd				
Chloromethane	nd				
Dibromochloromethane	nd				
1,2-Dibromomethane (EDB)	nd				
1,2-Dichlorobenzene	nd				
1,3-Dichlorobenzene	nd				
1,4-Dichlorobenzene	nd				
1,1-Dichloroethane	nd				
1,2-Dichloroethane (EDC)	nd				
1,1-Dichoroethene	nd				
trans-1,2-Dichloroethene	nd				
1,2-Dichloropropane	nd				
cis-1,-Dichloropropene	nd				

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	JAN*	APR	JUL	OCT	DEC				
trans-1,2-Dichloropropene	nd								
Methylene Chloride	nd								
1,1,2,2-Tetrachloroethane	nd								
Tetrachloroethane	nd								
1,1,1-Trichloroethane	nd								
1,1,2-Trichloroethane	nd								
Trichloroethene	nd								
Trichlorofluoromethane	nd								
Vinyl Chloride	nd								
AROMATICS			·						
Benzene	nd								
Chlorobenzene	nd								
1,2-Dichlorobenzene	nd								
1,3-Dichlorobenzene	nd								
1,4-Dichlorobenzene	nd								
Ethylbenzene	nd								
Methyl-t-Butyl Ether	nd								
Toluene	nd								
Total Xylenes	nd								
<u>SHS-17</u>									
Lab pH	7.3								
Lab Conductivity@25C	3270								
Total Dissolved Solids (Calc)	2430								
Total Alkalinity as CaCO3	179								
Total Hardness as CaCO3	1030								
Bicarbonate as HCO3	179								
Carbonate as CO3	nd								
Hydroxide	nd								
Chloride	269								
Sulfate	1020								
Calcium	313								
Magnesium	43.1								
Potassium	7.63								
Sodium	368								
HALOCARBONS									
Bromodichloromethane	nd								
Bromoform	nd								
Bromomethane	nd								
······································	JAN*	APR	JUL	OCT	DEC				
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Carbon Tetrachloride	nd								
Chloroethane	nd								
Chloroform	nd								
Chloromethane	nd								
Dibromochloromethane	nd								
1,2-Dibromomethane (EDB)	nd								
1,2-Dichlorobenzene	nd								
1,3-Dichlorobenzene	nd								
1,4-Dichlorobenzene	nd								
1,1-Dichloroethane	nd								
1,2-Dichloroethane (EDC)	nd			· · · · · · · · · · · · · · · · · · ·					
1,1-Dichoroethene	nd								
trans-1,2-Dichloroethene	nd								
1,2-Dichloropropane	nd				·				
cis-1,-Dichloropropene	nd								
trans-1,2-Dichloropropene	nd								
Methylene Chloride	nd								
1,1,2,2-Tetrachloroethane	nd								
Tetrachloroethane	nd								
1,1,1-Trichloroethane	nd								
1,1,2-Trichloroethane	nd								
Trichloroethene	nd								
Trichlorofluoromethane	nd								
Vinyl Chloride	nd								
AROMATICS									
Benzene	nd								
Chlorobenzene	nd								
1,2-Dichlorobenzene	nd								
1,3-Dichlorobenzene	nd								
1,4-Dichlorobenzene	nd								
Ethylbenzene	nd								
Methyl-t-Butyl Ether	nd								
Toluene	nd								
Total Xylenes	nd								
NOTES: *First guarter sampling was conducted on February 2 <sup>nd</sup> and February 7 <sup>th</sup> in 2006.									

SHS-18 was not sampled in 2006.

Groundwater from GBR-17 was not analyzed for PAH.

PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

### 4.0 Water and Product Levels

Groundwater monitoring wells have been installed throughout the site of the former refinery to monitor groundwater quality and flow direction (Figure 2). Water and product levels in each well are determined quarterly. These data are presented in tables 3 and 4 and are utilized to prepare the potentiometric surface maps shown in figures 5-8. The contours on the maps represent the groundwater surface elevation. The rate of groundwater flow is, on average, 0.625 ft/ft in a southwest direction, and is consistent throughout the year.

Well #	Wellhead	Depth to	Depth to	Product	Adjusted
	Elevation (ft)	Water (ft)	Product (ft)	Thickness (ft)	WSEL* (ft)
January 20	)06				
GRW-1	5394.30	54.58	-	-	5339.72
GRW-2	5391.28	49.60	-	-	5341.68
GRW-3	5388.77	53.15	-	-	5335.62
GRW-4	5390.02	59.25	-	-	5330.77
GRW-5	5390.56	64.75	-	-	5325.81
GRW-6	5390.81	48.08	-	-	5342.73
GRW-9	5395.70	52.66	-	-	5343.04
GRW-10	5395.02	58.85	58.84	0.01	5336.18
GRW-11	5397.85	58.02	-	-	5339.83
GRW-12	5397.24	44.70	-	-	5352.54
GRW-13	5396.90	52.37	-	-	5344.53
GBR-5	5395.07	26.50	-	-	5368.57
GBR-7	5395.85	29.03	-	-	5366.82
GBR-8	5390.50	41.94	-	-	5348.56
GBR-9	5389.92	47.56	~	-	5342.36
GBR-10	5390.57	42.52	-	-	5348.05
GBR-11	5389.43	42.44	-	-	5346.99
GBR-13	5393.04	42.38	-	-	5350.66
GBR-15	5397.99	40.89	-	-	5357.10
GBR-18	5421.68	55.14	•	-	5366.54
GBR-19	5393.83	43.23	42.85	0.38	5350.90
GBR-20	5393.47	35.75	-	-	5357.72

Table 3. Giant Industries, Inc. Bloomfield Refinery Quarterly Water Levels

Codestar Services, Incorporated PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

Well #	Wellhead	Depth to	Depth to	Product	Adjusted
	Elevation (ft)	Water (ft)	Product (ft)	Thickness (ft)	WSEL* (ft)
GBR-21S	5400.65	26.15	-	-	5374.50
GBR-21D	5400.19	41.10 <sup>7</sup>	-	-	5359.09
GBR-22	5395.91	DRY	-	-	Dry
GBR-23	5403.72	29.77	-	-	5373.95
GBR-24S	5396.08	33.30	-	-	5362.78
GBR-24D	5396.77	34.61	-	-	5362.16
GBR-25	5396.72	38.70	-	-	5358.02
GBR-26	5395.59	38.00	-	-	5357.59
GBR-30	5396.58	36.34	-	-	5360.24
GBR-31	5394.86	37.50	-	-	5357.36
GBR-33†	5396.28	39.65	-	-	5356.63
GBR-34	5394.00	39.82	39.80	0.02	5354.20
GBR-35	5393.66	39.83	39.80	0.03	5353.85
GBR-39	5397.55	40.33	-	-	5357.22
GBR-40	5400.76	32.27	-	-	5368.49
GBR-41	5396.35	27.00	-	-	5369.35
GBR-51	5389.68	44.10	-	-	5345.58
GBR-52	5387.74	41.67	-	-	5346.07
SHS-1	5383.54	40.74	-	-	5342.80
SHS-2	5381.66	31.05	-	-	5350.61
SHS-3	5383.33	NA	-	-	Not Accessible
SHS-4	5383.62	43.05	-	-	5340.57
SHS-5	5378.36	39.78	-	-	5338.58
SHS-6	5378.17	40.05	-	-	5338.12
SHS-8	5380.25	40.39	-	-	5339.86
SHS-9	5380.79	39.65	-	-	5341.14
SHS-10	5373.80	37.88	-	-	5335.92
SHS-12	5373.94	40.68	-	-	5333.26
SHS-13	5367.81	37.14	-	~	5330.67
SHS-14	5367.07	35.40	-	-	5331.67
SHS-15	5366.21	35.22	-	-	5330.99
SHS-16	5362.58	32.90	-	-	5329.68
SHS-17	5364.35	34.50	-	-	5329.85
SHS-18	5373.64	40.84	-	-	5332.80
SHS-19	5378.89	43.52	-	-	5335.37

Codestar Services, Incorporated PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

Well #	Wellhead	Depth to	Depth to	Product	Adjusted
	Elevation (ft)	Water (ft)	Product (ft)	Thickness (ft)	WSEL* (ft)
April 2006					
GRW-1	5394.30	54.50	-	-	5339.80
GRW-2	5391.28	41.50	-	-	5349.78
GRW-3	5388.77	54.21	-	-	5334.56
GRW-4	5390.02	54.55	-	-	5335.47
GRW-5	5390.56	67.04	-	-	5323.52
GRW-6	5390.81	43.48	-	-	5347.33
GRW-9	5395.70	52.50	-	-	5343.20
GRW-10	5395.02	52.78	52.75	0.03	5342.26
GRW-11	5397.85	57.30	-	-	5340.55
GRW-12	5397.24	NA	-	-	Water Below Pump
GRW-13	5396.90	51.86	-	-	5345.04
GBR-5	5395.07	27.30	-	-	5367.77
GBR-7	5395.85	29.76	-	-	5366.09
GBR-8	5390.50	42.34	-	-	5348.16
GBR-9	5389.92	47.70	-	-	5342.22
GBR-10	5390.57	42.54	-	-	5348.03
GBR-11	5389.43	42.62	-	-	5346.81
GBR-13	5393.04	42.92	-	-	5350.12
GBR-15	5397.99	40.76	-	-	5357.23
GBR-18	5421.68	35.94	-	-	5385.74
GBR-19	5393.83	42.04	-	-	5351.79
GBR-20	5393.47	37.26	-	-	5356.21
GBR-21S	5400.65	26.70	-	-	5373.95
GBR-21D	5400.19	40.88	-	-	5359.31
GBR-22	5395.91	DRY	-	-	Dry
GBR-23	5403.72	30.50	-	-	5373.22
GBR-24S	5396.08	33.28	-	-	5362.80
GBR-24D	5396.77	34.60	-	-	5362.17
GBR-25	5396.72	38.07	-	-	5358.65
GBR-26	5395.59	37.85	-	-	5357.74
GBR-30	5396.58	36.25	-	-	5360.33
GBR-31	5394.86	37.38	-	-	5357.48
GBR-33†	5396.28	39.12	-	-	5357.16
GBR-34	5394.00	40.34	-	~	5353.66
GBR-35	5393.66	39.19	-	_	5354.47

Codestar Services, Incorporated PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

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Well #	Wellhead	Depth to	Depth to	Product	Adjusted
CDD 20	Elevation (ft)	Water (It)	Product (ff)	Thickness (ff)	WSEL* (II)
GBR-39	5397.55	40.48	-	-	5357.07
GBR-40	5400.76	.33.00	-	-	5367.76
GBR-41	5396.35	28.70		-	5367.65
GBR-51	5389.68	43.73	-	-	5345.95
GBR-52	5387.74	42.30	-	-	5345.44
SHS-1	5383.54	40.47	-	-	5343.07
SHS-2	5381.66	36.83	-	-	5344.83
SHS-3	5383.33	NA		-	Not Accessible
SHS-4	5383.62	42.83	-	-	5340.79
SHS-5	5378.36	39.52	-	-	5338.84
SHS-6	5378.17	39.80	-	-	5338.37
SHS-8	5380.25	40.20	-	-	5340.05
SHS-9	5380.79	39.04	-	-	5341.75
SHS-10	5373.80	36.85	-	-	5336.95
SHS-12	5373.94	40.34	-	-	5333.60
SHS-13	5367.81	36.84	-	-	5330.97
SHS-14	5367.07	35.10	-	_	5331.97
SHS-15	5366.21	33.92	-	-	5332.29
SHS-16	5362.58	31.65	-		5330.93
SHS-17	5364.35	32.61	-	-	5331.74
SHS-18	5373.64	40.33	-	-	5333.31
SHS-19	5378.89	43.24	-	-	5335.65
		L	<u></u> _	I	
July 2006	······································		·····		
GRW-1	5394.30	55.10	-	-	5339.20
GRW-2	5391.28	NA	-	-	Not Accessible
GRW-3	5388.77	54.65	-	-	5334.12
GRW-4	5390.02	57.53	-	_	5332.49
GRW-5	5390.56	66.48	-	-	5324.08
GRW-6	5390.81	43.34	-	-	5347.47
GRW-9	5395.70	48.80	-	-	5346.90
GRW-10	5395.02	43.20	-	-	5351.82
GRW-11	5397.85	59.95	-	-	5337.90
GRW-12	5397.24	NA	-	-	Water below pump
GRW-13	5396.90	56.36	-	-	5340.54
GBR-5	5395.07	30.35	-	-	5364 72

Codestar Services, Incorporated PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

Well #	Wellhead	Depth to	Depth to	Product	Adjusted
	Elevation (ft)	Water (ft)	Product (ft)	Thickness (ft)	WSEL* (ft)
GBR-7	5395.85	31.70		-	5364.15
GBR-8	5390.50	43.25	-	-	5347.25
GBR-9	5389.92	47.72	-		5342.20
GBR-10	5390.57	42.53	-	-	5348.04
GBR-11	5389.43	43.00	-		5346.43
GBR-13	5393.04	43.74	-	-	5349.30
GBR-15	5397.99	40.24	-	-	5357.75
GBR-18	5421.68	36.53	-	-	5385.15
GBR-19	5393.83	42.26	-	-	5351.57
GBR-20	5393.47	38.90	-	-	5354.57
GBR-21S	5400.65	40.88	-	-	5359.77
GBR-21D	5400.19	27.21	-	-	5372.98
GBR-22	5395.91	DRY	-	-	Dry
GBR-23	5403.72	30.35	-	-	5373.37
GBR-24S	5396.08	33.14	-	-	5362.94
GBR-24D	5396.77	34.35	-	-	5362.42
GBR-25	5396.72	37.75	_	-	5358.97
GBR-26	5395.59	37.50	-	-	5358.09
GBR-30	5396.58	36.08	-	-	5360.50
GBR-31	5394.86	37.00	-	-	5357.86
GBR-33†	5396.28	38.51	-	-	5357.77
GBR-34	5394.00	38.45	-	-	5355.55
GBR-35	5393.66	38.60	-	-	5355.06
GBR-39	5397.55	39.73	-	-	5357.82
GBR-40	5400.76	32.05	-	-	5368.71
GBR-41	5396.35	29.97	-	-	5366.38
GBR-51	5389.68	43.78	-	-	5345.90
GBR-52	5387.74	42.30	-	-	5345.44
SHS-1	5383.54	40.70		-	5342.84
SHS-2	5381.66	37.25	-	-	5344.41
SHS-3	5383.33	NA	-	-	Not Accessible
SHS-4	5383.62	42.95	-	-	5340.67
SHS-5	5378.36	39.78	-	-	5338.58
SHS-6	5378.17	40.00	-	-	5338.17
SHS-8	5380.25	40.45		-	5339.80
SHS-9	5380.79	NA	-	-	Out of service

Codestar Services, Incorporated PO Box 3861 Farmington, NM 87499-3861 Office (505) 334-2791

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Annual Report 2006, Former Giant Refinery
Giant Industries Arizona, Inc.
March 2007

Well #	Wellhead Elevation (ft)	Depth to Water (ft)	Depth to Broduct (ft)	Product	Adjusted
SHS-10	5373.80	40.80			5222 00
SHS-12	5373.94	38.30	_	_	5225.64
SHS-13	5367.81	37.29	_	_	5220.52
SHS-14	5367.07	NA			3330.32
SHS-15	5366.21	34.50			Out of service
SHS-16	5362.58	32.15			5331./1
SHS-17	5364 35	34.10			5330.43
SHS-17	5272.64	NA			5330.25
SHS-10	5279.90	12 25		-	Out of service
513-19	3370.09	43.35	-		5335.54
October 200	06				
GRW-1	5394.30	39.15	-	-	5355.15
GRW-2	5391.28	42.37	-	-	5348.91
GRW-3	5388.77	44.19	-	-	5344.58
GRW-4	5390.02	55.10	-	-	5334.92
GRW-5	5390.56	55.69	-	-	5334.87
GRW-6	5390.81	49.83	-	-	5340.98
GRW-9	5395.70	49.70	-	-	5346.00
GRW-10	5395.02	60.58	-	-	5334.44
GRW-11	5397.85	61.45	-	-	5336.40
GRW-12	5397.24	NA	. –	-	Water below pump
GRW-13	5396.90	48.68	-	-	5348.22
GBR-5	5395.07	21.04	-	-	5374.03
GBR-7	5395.85	29.08	-		5366.77
GBR-8	5390.50	43.02	-	-	5347.48
GBR-9	5389.92	47.87	-	-	5342.05
GBR-10	5390.57	42.54	-	-	5348.03
GBR-11	5389.43	43.09	-	-	5346.34
GBR-13	5393.04	43.34	-	-	5349.70
GBR-15	5397.99	40.18	-	-	5357.81
GBR-18	5421.68	36.73	-	-	5384.95
GBR-19	5393.13	41.99	-	-	5351.14
GBR-20	5393.47	36.20	-	-	5357.27
GBR-21S	5400.65	27.18		-	5373.47
GBR-21D	5400.19	40.52	-	-	5359 67
GBR-22	5395.91	Dry	-	-	Dry

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Well #	Wellhead	Depth to	Depth to	Product	Adjusted
	Elevation (ft)	Water (ft)	Product (ft)	Thickness (ft)	WSEL* (ft)
GBR-23	5403.72	29.89	-	-	5373.83
GBR-24S	5396.08	32.43	-	-	5363.65
GBR-24D	5396.77	33.96	-	-	5362.81
GBR-25	5396.72	37.94	-	-	5358.78
GBR-26	5395.59	* 35.21	-	-	5360.38
GBR-30	5396.58	34.11	-	-	5362.47
GBR-31	5393.69	37.04	-	-	5356.65
GBR-33†	5396.28	39.03	-	-	5357.25
GBR-34	5394.00	39.15	-	-	5354.85
GBR-35	5393.66	39.25	-	-	5354.41
GBR-39	5397.55	39.34	-	-	5358.21
GBR-40	5400.76	33.34	-	-	5367.42
GBR-41	5396.35	28.27	-	-	5368.08
GBR-51	5389.68	42.20	-	-	5347.48
GBR-52	5387.74	40.98	-	-	5346.76
SHS-1	5383.54	40.73	-	-	5342.81
SHS-2	5381.66	40.49	, -	-	5341.17
SHS-3	5383.33	NA	-	-	Not Accessible
SHS-4	5383.62	42.96	-	-	5340.66
SHS-5	5378.36	NA	-	-	Not Accessible
SHS-6	5378.17	39.84	-	-	5338.33
SHS-8	5380.25	40.56	-	-	5339.69
SHS-9	5380.79	NA	-	-	Out of service
SHS-10	5373.80	37.43	-	-	5336.37
SHS-12	5373.94	40.82	-	÷	5333.12
SHS-13	5367.81	37.23	-	-	5330.58
SHS-14	5367.07	36.56	-	-	5330.51
SHS-15	5366.21	34.42	-	-	5331.79
SHS-16	5362.58	32.10	-	-	5330.48
SHS-17	5364.35	33.99	-	-	5330.36
SHS-18	5373.64	39.98	-		5333.66
SHS-19	5378.89	42.72	-	-	5336.17
*WSEL = W	ater Surface Elevati	on Adjusted for Pro	oduct Depth using	0.8 g/ml.	

† Wellhead elevation has not been corrected after road construction.

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Well #	Product Thickness (ft) January 2006	Product Thickness (ft) April 2006	Product Thickness (ft) July 2006	Product Thickness (ft) October 2006
GRW-10	0.01	0.03	0	0
GBR-19	0.38	0	0	0
GBR-34	0.02	0	0	0
GBR-35	0.03	0	0	0.01
GBR-23	0	0	0	0.01
SHS-8	0	0	0	0.01

## Table 4. Giant Industries, Inc. Bloomfield Refinery Quarterly Product Levels

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فوروسيق فالأنماء مساهم ومراهد والمسامعان المالية مقاربها كالمراح يتماهم والمالية المرامي المعالي مسرامية وللغراب معموم ماريم

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### 5.0 Total Volume History

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Section 5 presents the volume of groundwater managed for the year. Total volume pumped from each well, current tank volumes and the re-injection volume is reported.

Tank Volume Change 2006						
Tank Number	Beginning Volume	Ending Volume	Change			
	(Gallons)	(Gallons)	(Gallons)			

11,830

2,998

8,832

# Table 5. Giant Industries, Inc. Bloomfield RefineryTank Volume Change 2006

Total Net Volume Change (Gallons):	2,998	
Table 6. Giant Industries, Inc. Bloomfield Refinery		
<b>Recovery Well Volume Tabulation 2006</b>		

Well #	Jan-Jul	Jul-Dec	Total	
GRW-1	25,000	17,594	42,594	
GRW-2	3,900	3,660	7,560	
GRW-3	64,590	36,456	101,046	
GRW-4	65,850	29,399 '	95,249	
GRW-5	132,210	153,801	286,011	
GRW-6	51,220	19,773	70,993	
GRW-9	68,010	45,808	113,818	
GRW-10	1,817,470	1,039,168	2,856,638	
GRW-11	109,180	72,151	181,331	
GRW-12	0	18,304	18,304	
GRW-13	20,730	12,077	32,807	
SHS-9	48	9	57	
SHS-14	19,216	42,440	61,656	
SHS-18	717	577	1,294	
SHS-19	202,648	236,587	439,235	
	Total Vo	lume Pumped in Gallons:	4,308,593	

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# Table 7. Giant Industries, Inc. Bloomfield Refinery Total Volume Summary 2006

Total Water Treated and Pumped to the Infiltration Gallery:	4,311,591 gallons
Net Change in Storage Volume:	2,998 gallons
Total Volume of Water Recovered:	4,308,593 gallons

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Annual Report 2006, Former Giant Refinery Giant Industries Arizona, Inc. March 2007

### **6.0 FIGURES**

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# RIVER TERRACE VOLUNTARY CORRECTIVE MEASURES BIOVENTING SYSTEM ANNUAL REPORT

January 2007 through December 2007



SAN JUAN REFINING COMPANY GIANT – BLOOMFIELD REFINERY SUBMITTED: JANUARY 2008



BLOOMFIELD REFINERY



January 25, 2008

Certified Mail: 7007 0220 0004 0187 0169 7007 0220 0004 0187 0152

Hope Monzeglio New Mexico Environmental Department Hazardous Waste Bureau 2905 Rodeo Park Drive East Bldg 1 Santa Fe, NM 87505 Wayne Price New Mexico Oil Conservation Division Environmental Bureau 1220 South St. Francis Dr Santa Fe, NM 87505

### Re: River Terrace Voluntary Corrective Measures Bioventing System Annual Report January 2007 through December 2007

Dear Hope and Wayne,

Western Refining - Bloomfield Refinery submits the River Terrace Voluntary Corrective Measures Bioventing System Annual Report as requested by NMED. This report summarizes data gathered throughout 2007.

If you have questions or would like to discuss any aspect of the report, please contact me at (505) 632-4171.

Sincerely,

Vames R. Schmaltz Environmental Manager Bloomfield Refinery

Cc: Robert Wilkinson, USEPA – Region VI Brandon Powell, NMOCD Aztec District Office

### Section Title 1.0 Executive Summary 2.0 Introduction Scope of Activities 3.0 4.0 Regulatory Criteria / Groundwater Cleanup Standards 5.0 **Monitoring Results** 6.0 In-Situ Respiration Test 7.0 Summary 8.0 Maps 9.0 Field Methods 10.0 Chemical Analytical Program 11.0 Chemical Analytical Reports

# CONTENTS

# **Executive Summary**

On-going sampling at the River Terrace area is conducted in accordance with the approved Bioventing System Monitoring Plan, dated October 28, 2006, and in accordance with an NMED comment letter dated June 13, 2007.

A facility plot plan and river terrace project plot plan are provided in Section 7.0

The bioventing system was installed to provide oxygen to the subsurface and support aerobic biodegradation of petroleum hydrocarbons that were identified in soil along the western portion of the river terrace. The project includes a dewatering system to provide an increased vadose zone for bioremedial activity.

Quarterly analysis of the groundwater and soil gas of the TP, DW, and MW wells provide periodic progress information of the bioventing system. Performance monitoring offers periodic feedback of remediation operation and GAC filter capability. An in situ respiration test was not performed in May 2007 due to high flow rates of the San Juan River and the inability to duplicate conditions similar to the May 2006 respiration test. The in situ respiration test was re-scheduled and conducted in September 2007.

Field data collected throughout 2007 indicate the bioventing system is continuing to enhance bioremedial activity within the river terrace area. Soil gas concentrations collected in the field show that the bioventing system provides sufficient oxygen supply to fully oxygenate the subsurface, supporting aerobic biodegradation of hydrocarbons. These results suggest that as treatment progresses, petroleum hydrocarbon concentrations will diminish.

Section 2.0 Introduction

# INTRODUCTION

Owner:	San J 23733 Scotts	uan Refining Company 3 North Scottsdale Road sdale, Arizona 85255	(parent corporation)	
Operator:	Weste P.O. I Bloom	ern Refining Box 159 nfield, New Mexico 87413	(postal address)	
	Weste #50 R Bloon	ern Refining d 4990 nfield, New Mexico 87413	(physical address)	
Facility Name:	Bloon #50 R Bloon	nfield Refinery d 4990 nfield, New Mexico 87413	(physical address)	
Facility Status	Corre	ctive Action/Compliance		
US EPA ID	NMD	089416416		
SIC Code	2911			
Purpose of Monitoring: River Terrace Voluntary Corrective Measures – Assess and Provide Periodic Progress Information				
Type of Monitoring:		Periodic Groundwater and Soil Vapor Monitoring		

# **BACKGROUND INFORMATION**

### SITE LOCATION AND DESCRIPTION

The Bloomfield Refinery is a crude oil refining facility with a crude capacity of 18,000 barrels per day. It is located approximately 1 mile south of Bloomfield, New Mexico, in San Juan County, latitude N36 41' 87", longitude W107 58' 70". It is further located approximately ½ mile east of State Route 550 on Count Road 4990 (a.k.a. Sullivan Road).

The refinery is located on a bluff 120 feet above the south side of the San Juan River. The top of the bluff is relatively flat and is at an elevation of 5,540 feet above sea level. The geological units that comprise the site include, in order of increasing depth, San Juan River Alluvium, Quaternary apron deposits, Aeolian sand and silt, Jackson Lake Terrace, and the Tertiary Nacimiento Formation. An unnamed arroyo flows toward the San Juan River on the southern and western edges of the site. East of the site, a welldefined arroyo cuts a small canyon from the bluff to the San Juan River. Hammond Ditch lies on the bluff between the limit of the Jackson Lake Terrace and the refinery.

Refinery offices are on the western end of the facility, along with warehouse space, maintenance areas, and a storage yard containing used material (e.g., pipes, valves). Petroleum processing units, located in the northwest portion of the refinery, include the crude unit, fluidized cracking unit, catalytic polymerization unit, and hydrodesulfurization unit. The API Separator is located in the northwestern portion of the site. The aeration lagoons are located in the north central section of the refinery.

In the central portion of the site, aboveground storage tanks (AST's) occupy a large percentage of refinery property. South of the refinery and across Sullivan Road are terminals for loading product and off-loading crude, as well as gas storage and hazardous waste storage.

Western Refining merged with San Juan Refining Company (SJRC) May 31, 2007. The refinery is operated by Western Refining. The historical and current activities conducted at the refinery are petroleum processing, crude and product storage, crude unloading and product loading, waste management (closed and existing facilities), and offices and non-petroleum material storage

### HISTORY OF RIVER TERRACE

### 1999

Sheet piling was installed along with a bentonite slurry wall adjacent to the San Juan River, at the River Terrace, in order to intercept a small hydrocarbon seep that had been detected in the area.

### 2004

MW #48 & MW #49 and 8 temporary piezometers were installed to launch a River Terrace Investigation. Several temporary piezometers were drilled on the north side of Hammond Ditch to chart the Naciemento Formation. The development of a slurry wall that will be constructed on the north side of Hammond Ditch to prevent the spread of hydrocarbons to the San Juan River was initiated.

### 2005

The North Boundary Barrier Wall installation was completed March 2005. In April, five more temporary piezometers were installed at the River Terrace. Dewatering Wells #1 and #2 and thirteen bioventing wells were drilled in August at the River Terrace. Construction of the River Terrace Bioventing Project was initiated in August. The system was put on-line in January 2006.

#### 2006

System monitoring began in January abiding by the guidelines from the River Terrace Voluntary Corrective Measures Monitoring Plan approved by OCD and NMED. The In-Situ Respiration test was conducted in May 2006. Quarterly performance monitoring was carried out in March, June, September, and December of 2006.

### 2007

The dewatering pumps failed and were replaced in February. Breakthrough in the lead GAC (V-612) was detected in April at which time it was taken out of service and V-611 became the lead GAC. V-612 was replaced and back in service in June as the lag filter. Quarterly performance monitoring for the Bioventing System occurred in February, June, August, and October. The In-Situ Respiration Test was conducted in September 2007.

Section 3.0 Scope of Activities



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# **Scope of Activities**

Bloomfield Refinery initiated and constructed the River Terrace Bioventing Project to provide oxygen to the subsurface and support aerobic biodegradation of petroleum hydrocarbons existing in the soil at the River Terrace. The system was put on-line in January 2006 at which time the Voluntary Corrective Measure Bioventing Monitoring Plan was followed.

The NMED letter from June 13, 2007 (Direction to Modify Future Monitoring as reported in the River Terrace Voluntary Corrective Measures Bioventing System Annual Report January 2006 through December 2006) revised the monitoring plan to include additional metals analysis and incorporate quarterly sampling of TP-7. These revisions were implemented during the second quarter sampling event.

An in situ respiration test was not performed in May 2007 due to high flow rates of the San Juan River and the inability to duplicate conditions similar to the May 2006 respiration test. The in situ respiration test was re-scheduled and conducted in September 2007. Section 6 of this report presents the 2007 In Situ Respiration Test Summary.

### **Performance Monitoring**

On-going performance monitoring activities continued on a quarterly basis to assess the progress of the remediation system in reducing fuel hydrocarbons. Laboratory analysis of groundwater, treated groundwater, and soil gas are included in the on-going performance monitoring program. In addition, certain field parameter data are collected using portable gauges and gas meters.

Section 5.0 of this report summarizes the field parameters and analytical data obtained during routine performance monitoring performed during 2006 and 2007.

#### Pressure Readings

Pressure readings were collected from each of the TP wells (TP-7 was not measured in the first quarter), MW #49, and DW #1 were also measured using a hand-held Magnahelic gauge connected to the sample port at the top of each well. Injection pressure and flow rates were also taken from all bioventing wells (BV wells).

This data is available in Section 5.0 Tab 1 and Tab 4 in this report.

### Groundwater

First quarter groundwater samples were collected from each of the TP Wells (except TP-7), DW #1, and MW #49 during the week of February 26, 2007. Groundwater samples were analyzed for BTEX and MTBE (EPA Method 8021B),

GRO and DRO (EPA Method 8015B). MW #49 and DW #1 were also analyzed for Total Lead, Chromium, and Mercury (EPA Method 6010C and 7470). Field measurements included temperature, pH, conductivity, DO, and ORP.

Second quarter sampling occurred during the week of June 18, 2007. TP-7 was included in this sampling regimen per the June 13, 2007 NMED letter (Direction to Modify Future Monitoring as reported in the River Terrace Voluntary Corrective Measures Bioventing System Annual Report January 2006 through December 2006 – Item #2). TP-7 was sampled after a 24 hour recharge time. In the same letter, NMED required additional metals analysis of all the TP Wells, MW #49, and DW #1 on a quarterly basis for lead and on an annual basis for chromium and barium. Annual analysis of chromium and barium (EPA Method 6010B) was conducted in the second quarter event. Lead analysis (EPA Method 6010B) was performed on all of the TP Wells, MW #49, and DW#1. DW #1 also received an analysis for mercury (EPA Method 7470). In addition, groundwater samples were analyzed for BTEX and MTBE (EPA Method 8021B), GRO and DRO (EPA Method 8015B). Field measurements included temperature, pH, conductivity, DO, and ORP.

Third quarter monitoring occurred during the week of August 20, 2007 and fourth quarter monitoring was conducted during the week of October 29, 2007. During those sampling events, all TP Wells, MW #49, and DW #1 groundwater samples were analyzed for BTEX and MTBE (EPA Method 8021B), GRO and DRO (EPA Method 8015B), and lead analysis (EPA Method 6010B). DW #1 also received an analysis for mercury (EPA Method 7470). Field measurements included temperature, pH, conductivity, DO, and ORP. TP-7 was sampled after a 24 hour recharge time.

A summary of the groundwater monitoring results can be found in Section 5.0 Tab 2 and Tab 3.

### Soil Gas

First quarter samples were collected from each of the TP Wells (except TP-7), DW #1, and MW #49 during the week of February 26, 2007. Soil gas analysis included BTEX (8021B) and GRO (8015B). Field measurements of gas hydrocarbons (using a PID) and oxygen and carbon dioxide concentrations (using a multi-gas meter) were taken. The second quarter monitoring event utilized the same collection sites (with the addition of TP-7), and the same methods and parameters. Second quarter samples were collected the week of June 18, 2007. Third quarter monitoring was conducted during the week of August 20, 2007 and fourth quarter monitoring was carried out during the week of October 29, 2007.

A summary of the soil gas monitoring results can be found in Section 5.0 Tab 1.

### GAC Filter Monitoring

Extracted groundwater from the dewatering wells is treated prior to discharge to the raw water ponds, located within the east portion of the refinery. Extracted groundwater is pumped through two GAC filters positioned in series for removal of dissolved-phase hydrocarbons.

GAC filter sampling includes influent samples from a sample port located upstream of the GAC filters, and effluent samples collected from ports located after each of the lead and lag GAC filters. Monitoring the performance of the GAC filters is necessary to estimate GAC filter change-out frequency.

GAC filter influent samples (GAC Inf) and effluent samples collected downstream of the lag GAC filter (GAC 2 Eff) were collected quarterly. Effluent samples from the lead GAC filter (GAC 1 Eff) were obtained weekly until breakthrough was detected. Samples were analyzed for BTEX by EPA Method 8021B, GRO and DRO by EPA Method 8015B.

Break through in the lead GAC was detected in April through lab analysis and V-612 was bypassed and taken out of service on April 30, 2007. V-611 became the lead GAC at that time.

Pumping operations were interrupted from January 11, 2007 to February 6, 2007 due to both dewatering pumps breaking down and subsequent replacement of both pumps. Since that time, efforts have been made to optimize the dewatering system without damaging the pumps by adjusting pump speed to match pump outflow with water table inflow.

In October, all piping at the River Terrace Bioventing System was re-insulated with weatherproof insulation.

A summary of the GAC filter performance monitoring results is presented in Section 5.0 Tab 5 of this report.

### **Field Data Collection**

All water/product levels were measured to an accuracy of 0.01 foot using a Geotech Interface Probe. After determining water levels, purge volumes were calculated.

Soil gas purging and sampling were done before groundwater purging and sampling. After sufficient purging (three well volumes), soil gas samples were collected using the vacuum pump. Field measurements of vapor-phase organics (using a PID meter), oxygen, and carbon dioxide concentrations (using a multi-gas meter) were recorded using portable field instruments.

Prior to soil gas purging, a YSI 550A Dissolved Oxygen Probe was used to determine dissolved oxygen (DO) levels. At least three well volumes were purged

from each well prior to groundwater sampling. Electrical conductance, pH, temperature, and oxidation reduction potential were monitored during purging using an Ultrameter 6P. The wells were considered satisfactorily purged when the pH, E.C., and temperature values did not vary by more than 10 percent for at least three measurements.

Field data and analytical results can be found in Section 5.0 – Tabs 1, 2, 3, 4 and 5.

All purged water was collected and disposed of through the refinery wastewater system.

Section 4.0 Regulatory Criteria / Groundwater Cleanup Standards

# TABLE OF NEW MEXICO AND THE U. S. EPA'S GROUNDWATER STANDARDS

······································	(ppm) .	<u>(ppni)</u>	(ppn)	(ppm)
General Properties		· · ·		,
non-aqueous phase liquid (NAPL)	NP			
petroleum				
floating product	NP			
undesirable odor ( a )	NP			
pH (units) ( a )	6 - 9	6.5 - 8.5		
total dissolved solids (TDS) ( a ) $$	1000	500		
turbidity		π		
Biological Contaminants				
giardia lambia	tt	Zero		
iegionelia	tr	Zero		
total coliform	<5%+	Zero		
viruses	ti	Zero		
Inorganic Contaminants				
aluminum	5.0 ( i )	0.05 - 0.2 ( a )		
ammonia				30 .
antimony		0.006	0.006	• •
arsenic	0.1	0.05	.0.05	
asbestos-fibers/liter (longer than 10 um)		7 million	7 million	
barium	1.0	2	2	
beryllium		0.004	0.004	
boron	0.75(i)			0.06
bromate		0.01 (p)	Zero ( p )	
cadmium	0.01	0.005	0.005	
chlorate				0.01

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
chloride ( a )	250	250		0.01
chiorine				1
chlorine dioxide				0.08
chlorite		1.0(p)	0.08(p)	
chromium	0.05	0.1	0.1	
cobalt ( i )	0.05			
copper		1.3 (al)	1.3	
cyanide	0.2	0.2	0.2	
fluoride	1.6	4.0		
fluoride ( a )		2.		
iron ( a )	1.0	0.3		
lead	0.05	0.015 ( al )	Zero	
manganese ( a )	0.2	0.05		
mercury	0.002	0.002	0.002	
molybdenum	1.0 ( i )			0.05
nickel	0.2(i)	0.1	0.1	۰.
nitrate - N	10	10	10	
nitrite - N		1	1	
nitrate + nitrite ( as N )		10	10	
selenium	0.05	0.05	0.05	
silver	0.05	0.05	0.05	
silver(a)	-	0.1	· .	
sodium			· ·	.20
strontium	- 	·		17
sulfate	600 ( a )	250(a)/400( p)	400	
thallium		0.002	0.0005	
vanadium		•		0.02
zinc(a)	10.0	5		
Dedinautius Conteminente				
Kauloactive Contaminants		· ·		
Gross alpha (pCi/L) *		15	Zero	
Gross beta & photon emitters (mrem/yr) **		4	Zero	
PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
------------------------------------	---------------------	---------------------------	-------------------	-----------------
radium 226 (pCi/L)		20(p) .	Zero	
radium 228 (pCi/L)		20(p)	Zero	
radium 226 + 228 (pCi/L)	30	5	Zero	
radon 222 (pCi/L)		300(p)	Zero	
uranium	5	0.02(p)	Zero	
Benzenes				
benzene	0.01	0.005	Zero	
Alkyl Benzenes				
methylbenzene (toluene)	0.75	1 ( p )/0.04 ( a )	}	
ethylbenzene	0.75	0.7 ( p )/0.03 ( a )	0.7	
dimethyl benzene isomers (xylenes)	0.62	10(p)/0.02(a )	10	
vinylbenzene (styrene)		0.1	0.1	
trimethyl benzene isomers		· .		
propyl benzene isomers				
butyl benzene isomers				
Chlorinated Benzenes				
chlorobenzene	tox	0.1	0.1	
o-dichlorobenzene	tox	0.6	0.6	
m-dichlorobenzene	tox			
p-dichlorobenzene	tox	0.075(p)/ 0.005 (a)	0.075	
1,2,4-trichlorobenzene		0.07	0.07	
1,3,5-trichlorobenzene	. ·			0.04
1,2,4.5-tetrachlorobenzene	tox			
pentachlorobenzene	tox			
hexachlorobenzene	tox	0.001	Zero	
Toluenes				
o-chlorotoluene				0.1
p-chlorotoluene				0.1
2.4-dinitrotoluene (2,4-DNT)	tox			

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPAHA (ppm)
2,4.6-trinitrotoluene (TNT)				0.002
isopropyltoluene				
Nitrogenated Benzenes				
aminobenzene (aniline)				
nitrobenzene	tox			
1.3-dinitrobenzene				0.001
Phenols (hydroxybenzenes)	0.005(a)			•
phenol (carbolic acid)	tox			4
2-chlorophenol				0.04
2,4-dichlorophenol	tox			0.02
2,4-dinitro-o-creosol	τοχ	- 1		·
2,4-dimethylphenol				
2-methylphenol				
4-methylphenol				
2-nitrophenol				
dinitrophenols	τοχ			
2,4,5-trichlorophenol	tox			
2,4.6-trichlorophenol	tox			
2,4,6-trichlorophenol	tox			· .
pentachloropheno!	tox	0.001(p)/0.03 (a)	Zero	
p-cresol				
Polycyclics				
acenapthene				
anthracene	tox			
benz(a)anthracene	· · · · · · · · · · · · · · · · · · ·	0.0001(p)	Zero	
benzo(a)pyrene	0.0007	0.0002	Zero	
benzo(b)fluoranthene		0.0002(p)	Zero	
benzo(k)fluoranthene	tox	0.0002(p)	Zero	
chrysene		0.0002(p)	Zero	
dibenz(a)anthracene		0.0003(p)	Zero	
diphenvlhvdrazine	ιοχ			



PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
fluoranthene	tox			
fluorene	IOX			
indeno(1.2.3-c.d)pyrene		0.0004(p)	Zero	
naphthalene	tox			0.3
naphthalenes ****	0.03		· .	
phenanthrene	tox			
polychlorinated biphenyls.(PCBs)	0.001			,
PCBs as decachiorobiphenyl		0.0005	Zero	
pyrene	tox			
Methanes				· .
chloromethane (methyl chloride)	tox			0.003
dichloromethane (methylene chloride)	0.1	0.005	Zero	
trichloromethane (chloroform)	0.1		Zero(p)	
tetrachloromethane (carbon tetrachloride)	0.01	0.005	Zero	
bromomethane (methyl bromide)	τοχ			0.01
bromochloromethane				0.09
bromodichloromethane	τοχ		Zero ( p )	
chlorodibromomethane			Zero ( p )	0.1
tribromomethane (bromoform)	tox		Zero ( p )	
trihalomethanes (THMs) ***		0.1/0.08(p)	Zero	
fluorotrichloromethane (Freon 11)	tox			2
dichlorodifluoromethane (Freon 12)	tox			1
Ethanes				
1.2-dibromoethane (ethylene dibromide, EDB)	0.0001	0.00005	Zero	
1,1-dichloroethane	0.025			
1.2-dichloroethane (ethylene dichloride, EDC)	0.01	0.005	Zero	
1,1,1-trichloroethane (TCA)	0.0ó	0.2	0.2	
1,1,2-trichloroethane	0.01	0.005	0.003	
111,1.2-tetrachloroethane				0.07

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
1.1.2.2-tetrachloroethane	0.01			
nexachloroethane	tox			
Ethenes (Ethylenes)		·		
				15
chloroethane (vinyl chloride)	0.001	0.002	Zero	
1,1-dichloroethene	0.005	0.007	0.007	•
cis-1,2-dichloroethene	tox	0.07	0.07	
trans-1,2-dichloroethene	tox	0.1	0.1	
trichloroethene (TCE)	0.1	0.005	Zero	
tetrachioroethene (perchioroethylene, PCE)	0.02	0.005	Zero	
Propanes & Propenes	,			
1,2-dichloropropane (propylene dichloride,		0.005	Zero	
PDC)		0.000	2010	
1.2,3-trichloropropane	·			0.04
1.2-dibromo-3-chloropropane (DBCP)		0.0002	Zero	
dichloropropenes	tox			
1.3-dichloropropene	tox		х	0.01
Aldehydes, Ethers, Furans, & Ketones		-		
acetone				
bis (2-chloroethyl) ether	tox	, <b>,</b>		
bis (2-chloroisopropyl) ether	tox			0.3
bis (chloromethyl) ether	tox			
dibenzofuran				
p-dioxane (diethylene dioxide)				0.568
formaldehyde (methanal)				1
isophorone	τοχ			0.1
methyl ethyl ketone (MEK, 2-butanone)				0.1
methyl tertiary butyl ether (MTBE)	0.1 (a)			0.04
tetrahydrofyran				

PARAMETER	NEW ME (ppn	XICO n)	EPA MCL (ppm)	EPA MCLG (ppm)	EPAHA (ppm)
				,	
NITOSamines					
N-nitrosodiethylamine	tox				
N-nitrosodimethylamine (NDMA)	tox				
N-nitrosodibutylamine	tox				
N-nitrosodiphenylamine	tox				
N-nitrosopyrrolidine	IOX				·
Phthalate Esters					
dibutyl phthalate	tox		,		
di-2-ethylhexyl phthalate	tox		0.006	Zero	
diethyl phthalate	tox				
dimethyl phthlate	ION				
Evplosives					
Explosives					
dinitrophenols	tox				
2,4-dinitrotoluene (2,4-DNT)	tox				
hexahydro-1.3,5-trinitro-s-triazine (RDX)					0.002
НМХ					0.4
nitroglycerin (glycerol trinitrate)					0.005
nitroguanidine					0.7
2,4,6-trinitrotoluene (TNT)					0.002
Other Organics					
acrolein	tox				
acrylamide			π	Zero	
acrylonitrile	tox				0.004
benzidine	tox				
chloral hydrate			tt(p)	0.04(p)	
chloramine					0.3

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG	ЕРА НА (µpni)
dibromoacetonitrile				0.02
dichloroacetic acid		-		0.003
dichloroacetonitrile				0.006
dichlorobenzidine	tox			
di(2-ethylhexyl)adipate		0.4	0.4	
diisopropyl methylphosphonate			t i	0.6
epichlorohydrin (1-chlor-2,3- epoxypropane)		τ	Zero	
ethylene glycol (1,2-ethanediol)			I	7
Haloacetic Acids ****		0.06(p)	i i	
dichloroacetic acid			Zero (p)	
trichloroacetic acid			0.3 (p)	
hexachlorobutadiene	tox			0.001
hexachlorocyclopentaciene	tox	0.05(p)/0.008 (a)	0.05	
n-hexane				4.0
Other Pesticides				
acifluorfen				0.1
alachlor		0.002	Zero	
aldicarb		( g ) 200.0	0.001	
aldicarb sulfone		0.002(p)	0.001	
aldicarb sulfoxide		0.004(p)	0.001	
aldrin	tox			0.001
ametryn				0.06
ammonium sulfamate				2
arsenal (imazapyr)			i	
atrazine		0.003	0.003	
baygon	~			0.003
bentazon				0.02
bromacil				0.09
butylate			, .	0.35
carbaryl		· .	; , 	0.7
carbofuran		0.04	0.04	

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPAHA (ppm)
carboxin		,		0.7
chloramben				0.1
chiordane	tox	0.002	Zero	
chlorothaloni)				0.5
chlorpyrifos				0.02
cvanazine				0.01
2,4-D (2,4-dichlorophenoxyacetic acid)		0.07	0.07	
dacthal				4
dalapon		0.2	0.2	
DDT (dichloro diphenyl trichloroethane)	IOX			
4,4'-DDD				
4,4'-DDE				
diazinon				0.0006
dicamba				0.2
dieldrin	tox			0.002
dimethrin				12
dinoseb		0.007	0.007	
dioxin		0.00000005	Zero	
diphenamid				0.2
diquat		0.02	0.02	
disulfoton				0.0003
diuron				0.01
endosulfan	tox			
endotnall		0.1	0.1	
endrin	tox	0.002	0.002	
ethylene thiourea				0.001
fenamiphos				0.002
fluometuron				0.09
fonofos				0.01
glyphosate		0.7	0.7	
heptachlor	tox	0.0004	Zero	
heptachlor epoxide		0.0002	Zero	
hexazinone				0.2
iindane (gamma-BHC)	tox	0.0002	0.0002	

PARAMETER	NEW MEXICO	EPA MCL	EPA MCLG	EPAHA
	(ppm)	(ppm)	<u>(ppin)</u>	<u>(ppn)</u>
aipha-BHC	IOX .		i	
beta-BHC	tox			
delta-BHC		1 ce		
malathion .				0.2 -
maleic hydrazide				. 4
methomyl				0.2
methoxychlor		0.04	0.04	
methyl chlorophenoxyacetic acid (MCPA)			·	0.011
methyl parathion				0.002
metolachlor				0.1
metribuzin				0.2
oxamyl (vydate)	·	0.2	0.2	
paraquat				0.03
picioram		0.5	0.5	
prometon				0.1
pronamide				0.05
propachlor			:	0.09
propazine				0.01
ргорлат				0.1
simazine		0.004	0.004	
2,4,5-T (2,4,5-trichlorophenoxyacetic acid	i)			0.07
rebuthiuron			. :	0.5
terbacil				0.09
terbufos			`	0.0009
Ioxaphene	tox	0.003	Zero	
2,4,5-TP (silvex)		0.05	0.05	
trifluralin				0.005

## Abbreviations

al Action Level that, if exceeded, requires water treatment BHC benzene hexachloride, also called hexachlorocyclohexane DDD 1,1'-(2,2-dichloroethylidene) -bis/4-chlorobenzene

DDE 1.1'-(2.2-dichloroetheneylidene) -bis/4-chlorobenzene

HA Health Advisory

HMN octahydro-1.3.5.7-tetranitro-1.3.5.7-tetrazocine

MC1. Maximum Contaminant Level

MCLG Maximum Contaminant Level Goal

me/L milligrams per liter

mrem/yr millirem per year

mem edept dose committed over a 50-year period to a "reference man" from an annual intake rate of 2 liters drinking water per day

MTBE methyl tertiary butyl ether, a synonym for 2-methoxy-2-methyl propane (the standard includes other ether-based gasoline additives)

NP the contaminant shall Not be Present

pCi/L picocuries per liter

tox a numerical standard has not been established, but the contaminant is listed in a narrative standard of "toxic pollutant" defined in WQCC regulations

2.4.5-TP 2,4,5-trichlorophenoxpropionic acid

u Treatment Technique that public water system operators must adhere to instead of a numerical standard

um micrometer

U.S. EPA Uniter States Environmental Protection Agency

WQCC New Mexico Water Quality Control Commission

## Footnotes

\* The proposed standard excludes radon 222, radium 226 and uranium activity

\*\* This standard excludes radium 228 activity. Units for the existing standard are mrem/yr.

U.S. EPA has proposed to change the units to mrem ede/yr.

\*\*\* The "THMs" standard applies to the sum of chloroform, dichlorobromomethane, dibromochloromethane, and bromoform.

\*\*\*\* This standard applies to the sum of naphthalene and monomethylnaphthalene isomers. \*\*\*\*\* This standard applies to the sum of mono-, di-, and trichloroacetic acids, and mono- and dibromoacetic acids.

Use and Applicability of Standards

All New Mexico standards are adopted by the WQCC except for the MTBE and petroleum (floating product and undesirable odor) standards, which are adopted by the New Mexico Environmental Improvement Board.

U.S. EPA's MCLGs are set at levels that would result in no known or anticipated adverse health effects with an adequate margin of safety. MCLGs do not take treatment costs into considerartion and are not enforceable. Health-based proposed MCLs and final enforceable MCLs are set as close to MCLGs as feasible with use of best technology, treatment techniques and other means. U.S. EPA's HAs serve as informal technical guidance to assist Federal. State and Local officials responsible for protecting public health when emergency spills or contamination situations occur. They are not to be construed as legally enforceable Federal standards and are subject to change as new information becomes available. All HAs listed are for lifetime exposures except for p-dioxane (10 day) and n-hexane (7 year).

## NEW MEXICO ENVIRONMENT DEPARTMENT TPH SCREENING GUIDELINES October 2006

In some instances, it may be practical to assess areas of soil contamination that are the result of releases of petroleum products such as jet fuel and diesel, using total petroleum hydrocarbon (TPH) analyses. TPH results may be used to delineate the extent of petroleum-related contamination at these sites and ascertain if the residual level of petroleum products in soil represents an unacceptable risk to future users of the site. Petroleum hydrocarbons represent complex mixtures of compounds, some of which are regulated constituents and some compounds that are not regulated. In addition, the amount and types of the constituent compounds in a petroleum hydrocarbon release differ widely depending on what type of product was spilled and how the spill has weathered. This variability makes it difficult to determine the toxicity of weathered petroleum products in soil solely from TPH results; however, these results can be used to approximate risk in some cases, depending upon the nature of the petroleum product, the release scenario, how well the site has been characterized, and anticipated potential future land uses. In some cases, site clean up cannot be based solely on results of TPH sampling. The New Mexico Environment Department (NMED) will make these determinations on a case by case basis. If NMED determines that additional data are necessary, these TPH guidelines must be used in conjunction with the screening guidelines for individual petroleum-related contaminants in Table 3 and other contaminants, as applicable.

The screening levels for each petroleum carbon range from the Massachusetts Department of Environmental Protection (MADEP) Volatile Petroleum Hydrocarbons/Extractable Petroleum Hydrocarbons (VPH/EPH) approach and the percent composition table below were used to generate screening levels corresponding to total TPH. Except for waste oil, the information in the compositional assumptions table was obtained from the Massachusetts Department of Environmental Protection guidance document *Implementation of the MADEP VPH/EPH Approach* (October 31, 2002). TPH toxicity was based only on the weighted sum of the toxicity of the hydrocarbon fractions listed in Table 1.

Petroleum Product	C11-C22 Aromatics	C9-C18 Aliphatics	C19-C36 Aliphatics
Diesel #2/ new crankcase oil	60%	40%	0%
#3 and #6 Fuel Oil	70%	30%	0%
Kerosene and jet fuel	30%	70%	0%
Mineral oil dielectric fluid	20%	40%	40%
Unknown oil <sup>a</sup>	100%	0%	0%
Waste Oil <sup>b</sup>	0%	0%	100%

Table 1.	TPH	Com	positional	Assum	ptions	in Soil
THUIC TI	* * **	COM	0.00101011001	1 KOD GAAR	Peromo	

Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.



A TPH screening guideline was calculated for each of the types of petroleum product based on the assumed composition from Table 1 for petroleum products and the direct soil standards incorporating ceiling concentrations given in the MADEP VPH/EPH Excel spreadsheet for each of the carbon fractions. Groundwater concentrations are based on the weighted sum of the noncarcinogenic toxicity of the petroleum fractions.

Method 1 from the MADEP VPH/EPH document was applied, which represents generic cleanup standards for soil and groundwater. Method 1 applies if contamination exists in only soil and groundwater. The MADEP VPH/EPH further divides groundwater into standards. Standard GW-1 applies when groundwater may be used for drinking water purposes. GW-1 standards are based upon ingestion and use of groundwater as a potable water supply. The TPH screening guidelines for sites with potable groundwater are presented in Table 2a.

Petroleum Product	Residential Direct Exposure (mg/kg)	Industrial Direct Exposure (mg/kg)	Concentration in Groundwater (mg/L)
Diesel #2/crankcase oil	520	1120	1.72
#3 and #6 Fuel Oil	440	890	1.34
Kerosene and jet fuel	760	1810	2.86
Mineral oil dielectric fluid	1440	3040	3.64
Unknown oil <sup>a</sup>	200	200	0.2
Waste Oil	2500	5000	Petroleum-Related Contaminants
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants

### Table 2a. TPH Screening Guidelines for Potable Groundwater (GW-1)

Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

The second standard is GW-2, which is applicable for sites where the depth to groundwater is less than 15 feet from the ground surface and within 30 feet of an occupied structure. The structure may be either residential or industrial. GW-2 standards are based upon "inhalation exposures that could occur to occupants of the building impacted by volatile compounds, which partition from the groundwater" (MADEP 2001). The GW-2 screening guidelines ONLY apply for the evaluation of inhalation exposures. If potential ingestion or contact with contaminated soil and/or

October 2006 Page 2 of 5

groundwater could occur, then the screening guidelines provided in Table 2.a should be applied. Table 2.b lists the TPH screening guidelines for the inhalation scenario.

	ТРН				
Petroleum Product	Residential Direct Exposure (mg/kg)	Industrial Direct Exposure (mg/kg)	Concentration in Groundwater (mg/L)		
Diesel #2/crankcase oil	880	2200	30.4		
#3 and #6 Fuel Oil	860	2150	35.3		
Kerosene and jet fuel	940	2350	15.7		
Mineral oil dielectric fluid	1560	3400	10.4		
Unknown oil <sup>a</sup>	800	2000	50.0		
Waste Oil	2500	5000	Petroleum-Related Contaminants		
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants		

Table 2b.	<b>TPH Screening Guidelines –</b>	Vapor	Migration	and	Inhalation	of Groundwater	
		(GW	-2)				

Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Mineral oil based hydraulic fluids can be evaluated for petroleum fraction toxicity using the screening guidelines from Tables 2a and 2b specified for waste oil, because this type of hydraulic fluid is composed of approximately the same range of carbon fractions as waste oil. However, these hydraulic fluids often contain proprietary additives that may be significantly more toxic than the oil itself; these additives must be considered on a site- and product-specific basis (see ATSDR hydraulic fluids profile reference). Use of alternate screening guideline values requires prior written approval from the New Mexico Environment Department. TPH screening guidelines in Tables 2a and 2b must be used in conjunction with the screening levels for petroleum-related contaminants given in Table 3 because the TPH screening levels are NOT designed to be protective of exposure to these individual petroleum-related contaminants. Table 3 petroleum-related contaminants screening levels are based on the *NMED Technical Background Document for Development of Soil Screening Levels, Rev 4.0 (June 2006)*.

The list of petroleum-related contaminants does not include polyaromatic hydrocarbons (PAHs) with individual screening levels that would exceed the total TPH screening levels (acenaphthene, anthracene, flouranthene, flourene, and pyrene). In addition, these TPH screening guidelines are based solely on human health, not ecological risk considerations, protection of surface water, or



potential indoor air impacts from soil vapors. Potential soil vapor impacts to structures or utilities are not addressed by these guidelines. Site-specific investigations for potential soil vapor impacts to structures or utilities must be done to assure that screenings are consistently protective of human health, welfare or use of the property. NMED believes that use of these screening guidelines will allow more efficient screenings of petroleum release sites at sites while protecting human health and the environment. Copies of the references cited below are available on the MADEP website at http://www.state.ma.us/dep/bwsc/vph\_eph.htm and the NMED website at http://www.nmenv.state.nm.us/HWB/guidance.html.

	Values fo Exposur	or Direct e to Soil	NMED DAF <sup>a</sup> 20 GW			
Petroleum-Related Contaminants	NMED Residential SSL (mg/kg)	NMED Industrial SSL (mg/kg)	Protection (mg/kg in soil)	NMED DAF <sup>b</sup> 1 GW Protection (mg/kg in soil)		
Benzene	1.03E+01	2.58E+01	2.01E-02	1.00E-03		
Toluene	2.52E+02	2.52E+02	2.17E+01	1.08E+00		
Ethylbenzene	1.28E+02	1.28E+02	2.02E+01	1.01E+00		
Xylenes°	8.20E+01	8.20E+01	2.06E+00	1.03E-01		
Naphthalene	7.95E+01	3.00E+02	3.94E-01	1.97E-02		
2-Methyl naphthalene <sup>d</sup>	5.00E+02	1.00E+03	<sup>e</sup>	<sup>e</sup>		
Benzo(a)anthracene	6.21E+00	2.34E+01	1.09E+01	5.43E-01		
Benzo(b)fluoranthene	6.21E+00	2.34E+01	3.35E+01	1.68E+00		
Benzo(k)fluoranthene	6.21E+01	2.34E+02	3.35E+02	1.68E+01		
Benzo(a)pyrene	6.21E-01	2.34E+00	2.78E+00	1.39E-01		
Chrysene	6.15E+02	2.31E+03	3.48E+02	1.74E+01		
Dibenz(a,h)anthracene	6.21E-01	2.34E+00	1.04E+01	5.18E-01		
Indeno(1.2.3-c,d)pyrene	6.21E+00	2.34E+01	9.46E+01	4.73E+00		

Revised Table 3. Petroleum-Related	Contaminants	Screening	Guidelines
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<sup>a</sup> DAF - Dilution Attenuation Factor

<sup>b</sup> For contaminated soil in contact with groundwater.

<sup>e</sup>Based upon total xylenes

<sup>d</sup> No NMED value available, value taken from Massachusetts Contingency Plan, 310 CMR 40.0985, 4/3/06.

<sup>e</sup> No NMED value available and leachability-based value for DAF =1 or 20 not established in the Massachusetts Contingency Plan, 310 CMR 40.0985, 4/3/06.

### References

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October 2006 Page 5 of 5

## Section 5.0 Monitoring Results

Title	Tab Number
Soil Gas Monitoring	1
Groundwater Monitoring	2
Groundwater Metals Analysis	3
Bioventing Wells Pressure Reading	4
GAC Analysis	5



# **RIVER TERRACE**

**()** 



GRO (ug/L)	2800.0	8500.0	3100.0	920.0	8000.0	7300.0	7.4	1300.0	95.0		1100.0	150.0	25.0	<5.0	120.0	88.0	10.0	<5.0	<5.0		3 <0.005	1300.0	<5.0	<5.0	<5.0	13.0	7.6	19.0	
(Ug/L)	320.0	2100.0	210.0	170.0	1000.0	1200.0	1.0	390.0	12.0		88.0	17.0	2.8	<0.1	18.0	17.0	1.4	<0.1	<0.10		0.00009	23.0	<0.3	<0.1	<0.3	1.2	1.0	1.3	⊢
Ethylben ( <u>üg/</u> L)	3.5	12.0	<2.0	36.0	140.0	150	0.3	75.0	0.6		8.0	1.4	0.1	<0.10	1.6	1.1	<0.10	<0.10	<0.10		<0.000050	0.53	<0.10	<0.10	<0.10	0.11	<0.10	<0.10	
<ul> <li>Toluene</li> <li>(ug/L)</li> </ul>	47.00	321.00	5.50	<2.0	8.30	8.20	<0.10	<0.10	<0.10		11.00	1.80	0.23	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		<0.000050	2.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Benzene: (ug/l=):	5.80	22.00	2.60	29.00	<5.00	6.10	<0.10	23.00	6.10		7.80	0.36	0.21	<0.10	0.11	<0.10	<0.10	<0.10	<0.10		<0.000050	0.55	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Carbon Dioxide (%)	1.30	0.10	0.50	0.10	0.30	0.30	0.40	4.20	0.70		6.40	0.00	0.00	0.00	0.00	0.10	0.10	0.00	0.00		0.00	0.60	1.00	0.10	0.50	0.10	0.10	0.10	
Oxygen (%)	15.0	20.7	18.9	20.6	20.8	20.4	19.0	17.9	19.3		4.0	20.9	20.9	20.9	20.9	20.6	20.1	19.9	19.7		17.80	18.6	20.9	20.9	19.7	20.4	20.5	19.6	
DID (MGG)	1401.0	1534.0	1452.0	85.5	1146.0	1981.0	301.0	3275.0	51.0	はななななななななな	1589.0	92.7	23.8	5.4	67.0	8.8	112.0	13.0	0.7		WZ	179.8	2.9	6.6	1.3	5.2	19.0	16.0	
Pressure ( (Inches of Water)	0.00	0.30	0.05	0.01	0.02	0.11	0.00	0.00	0.00		0.00	0.05	0.15	0.01	0.08	0.10	0.10	0.00	0.00		0.00	0.00	0.0	0.00	0.00	0.00	0.0	0.00	
Depth to Water (ft)	5.14	8.04	6.8	5.68	7.42	7.79	5.67	6.24	5.29		6.62	9.83	8.27	7.37	9.03	8.86	7.5	7.73	6.86		6.44	8.09	7.23	7.41	7.77	7.52	7.02	7.62	- -
Purge - Volume (L)	9.4	15.0	12.5	10.4	13.5	14.2	10.3	11.4	9.6		12.0	18.0	15.1	13.4	16.5	16.2	13.7	14.1	12.5		11.8	15.0	13.2	13.5	14.0	13.7	12.8	13.9	
DATE	Week af 1/09/06	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	12/04/6	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07		Week of 1/09/06	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/6	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	Week of	1/09/06	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/6	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of
Activities	Pre-Dewater	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	4th Quarter 2007		Pre-Dewater	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	4th Quarter 2007		Pre-Dewater	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	
Sample: Location			I	ـــــــــــــــــــــــــــــــــــــ	 # <sup>-</sup> d.	L	•			加強の調整に			<u>.</u>	i	(# - d	1					4			{		L			

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Sample	Sampling Activities	DATE	Purge Volume (L)	Depthito Water (ft)	Pressure (Inches of Water)	(MPP) (MPP)	Oxygen	Carbon Dioxide (%)	Benzene - (uĝ/l-)	Toluene (ug/L)	Ethylben (ug/L)	Xylene (ug/L)	GRO (ug/L)
	Pre-Dewater	Week of 1/09/06	8.6	4.70	0.00	103.5	16.0	1.10	0.13	54.00	0.25	38.0	150.0
	1st Quarter 2006	Week of 3/06/06	14.0	7.81	0.01	1534.0	19.7	0.10	00.69	310.00	55.00	2000.0	34000.0
	2nd Quarter 2006	Week of 6/17/06	9.6	5.24	0.00	953.0	18.6	1.40	<10	15.00	11.00	130.0	1800.0
9	3rd Quarter 2006	Week of 9/11/06	9.7	5.32	0.00	137.0	18.6	1.40	<2.5	<2.5	00.67	380.0	1200.0
# - d.	4th Quarter 2006	Week of 12/04/6	11.0	5.95	0.00	1805.0	19.3	0:00	6.10	15.00	14.00	1400.0	8900.0
L	1st Quarter 2007	Week of 2/26/07	10.2	5.59	0.00	1268.0	19.8	09.0	<5.00	9.80	23.00	1000.0	6100.0
	2nd Quarter 2007	Week of 6/18/07	12.1	6.62	0.00	1100.0	18.6	1.90	<5.00	<5.00	<5.00	1500.0	, 9000.0
	3rd Quarter 2007	Week of 8/20/07	12.7	6.97	0.00	9890.0	16.9	2.60	<0.10	<0.10	<0.10	910.0	13000.0
	4th Quarter 2007	Week of 10/29/07	8.7	4.78	0.00	54.1	19.3	0.30	<0.10	<0.10	9.80	46.0	180.0
のないないない	「「「「「「「「」」」」」	なまたの											
	Pre-Dewater	Week of 1/09/06	10.4	5.63	0.00	350.0	16.5	1.40	2.70	41.00	0.36	210.0	570.0
	1st Quarter 2006	Week of 3/06/06	16.0	8.61	0.00	1534.0	20.0	0.30	7.60	47.00	6.50	950.0	4500.0
	2nd Quarter 2006	Week of 6/17/06	11.3	6.18	0.00	56.9	20.6	0.50	<0.10	0.18	<0.10	3.1	100.0
9	3rd Quarter 2006	Week of 9/11/06	11.3	6.17	0.00	8.1	26.0	09.0	<0.10	<0.10	0.18	1.0	17.0
# - d.	4th Quarter 2006	Week of 12/04/6	12.0	6.61	0.00	160.0	19.4	09.0	<0.50	<0.50	2.30	37.0	320.0
L	1st Quarter 2007	Week of 2/26/07	6.39	6.39	0.00	29.5	20.2	0:30	<0.20	<0.20	1.00	13.0	98.0
	2nd Quarter 2007	Week of 6/18/07	13.4	7.32	0.00	25.0	19.2	0.70	<0.10	<0.10	<0.10	<0.1	<5.0
	3rd Quarter 2007	Week of 8/20/07	14.0	7.65	0.00	14.0	19.1	09.0	<0.10	<0.10	<0.10	0.4	<5.0
	4th Quarter 2007	Week of 10/29/07	10.4	5.7	0.00	3.6	19.4	0.20	<0.10	<0.10	0.39	2.3	6.6
	Pre-Dewater	Veek of 1/09/06	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	1st Quarter 2006	Week of 3/06/06	R	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	2nd Quarter 2006	Week of 6/17/06	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1	3rd Quarter 2006	Week of 9/11/06	NR	NR	NR	NR	N	NR	R	R	R	R	R
.# - d	4th Quarter 2006	Week of 12/04/6	R	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1	1st Quarter 2007	Week of 2/26/07	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	R
	2nd Quarter 2007	Week of 6/18/07	9.9	5.4	0.00	35.0	20.6	0.00	<0.10	<0.10	<0.10	1.0	7.0
	3rd Quarter 2007	Week of 8/20/07	11.3	6.2	0.00	38.0	19.8	0.10	<0.10	<0.10	<0.10	<0.3	<5.0
	4th Quarter 2007	Week of 10/29/07		5.42	0.00	7.4	19.2	0.70	<0.10	<0.10	<0.10	0.9	9.4



NM = Not Measured

NR = Not Required



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# **RIVER TERRACE**

## Soil Gas Monitoring

Sample: Location	Sampling	DATE	Volume (L)	Depth to Water (ft)	Pressure (Inches of Water)	PID:	Oxygen ~ (%)	Carbon Dioxide	Benzene (ug/L)	Toluene (ug/L)	Ethylben (ug/E)	Xýleně. (ug/Ľ)	(ng/e) GRO
	Pre-Dewater	Week of 1/09/06	10.3	5.61	0.00	1589.0	4.6	8.90	6.90	31.00	2.90	300.0	1800.0
	1st Quarter 2006	Week of 3/06/06	16.0	8.92	0.05	1534.0	20.7	0.10	8.80	220.00	13.00	1900.0	7700.0
	2nd Quarter 2006	Week of 6/17/06	13.7	7.5	0.01	1641.0	20.9	0.10	<2.00	6.60	2.20	460.0	3700.0
8	3rd Quarter 2006	Week of 9/11/06	11.3	6.21	0.01	11.2	20.9	0.00	<0.10	<0.10	0.13	0.4	14.0
# - 41	4th Quarter 2006	Week of 12/04/6	15.0	8.21	0.02	555.0	20.5	0.40	<5.00	7.40	50.00	710.0	4700.0
L	1st Quarter 2007	Week of 2/26/07	15.6	8.57	0.05	1775.0	20.4	0.30	<5.00	9.50	130.00	1400.0	7100.0
	2nd Quarter 2007	Week of 6/18/07	11.3	6.22	0.00	59.0	20.1	0.10	<0.10	<0.10	<0.10	<0.3	<5.0
	3rd Quarter 2007	Week of 8/20/07	12.2	6.67	0.00	91.0	19.7	0.10	<0.10	<0.10	<0.10	0.8	6.2
	4th Quarter 2007	Week of 10/29/07	10.6	5.81	3.00	3.7	19.7	0.10	<0.10	<0.10	0.11	0.6	<5.0
					「「「「「「「「」」」」								
	Pre-Dewater	Week of 1/09/06	11.3	5.08	0.00	8.5	17.2	0.20	<0.05	0.05	0.18	0.4	31.0
	1st Quarter 2006	Week of 3/06/06	10.0	5.21	0.00	7.7	20.6	0.10	<0.05	0.09	0.06	0.5	8.0
	2nd Quarter 2006	Week of 6/17/06	0.6	5.26	00.0	13.9	20.9	0.00	<0.10	<0.10	0.10	0.6	31.0
6	3rd Quarter 2006	Week of 9/11/06	10.0	5.48	00.0	18.3	20.3	0:30	<0.10	0.21	0.18	2.5	140.0
# - dJ	4th Quarter 2006	Week of 12/04/6	10.0	5.39	0.00	9.6	20.9	0.10	<0.10	<0.10	0.16	3.5	20.0
L	1st Quarter 2007	Week of 2/26/07	9.2	5.07	0.00	95.1	20.6	0.20	<0.10	0.15	4.30	41.0	290.0
	2nd Quarter 2007	Week of 6/18/07	8.6	4.73	0.00	24.0	20.6	0.10	<0.10	<0.10	<0.10	6.0	6.6
	3rd Quarter 2007	Week of 8/20/07	9.4	5.18	0.00	48.0	19.9	0.00	<0.10	<0.10	<0.10	2.8	65.0
	4th Quarter 2007	Week of 10/29/07	9.0	4.94	0.00	8.2	19.7	0.10	<0.10	<0.10	0.56	4.0	49.0
		Week of											
	Pre-Dewater	1/09/06	9.3	5.08	0.00	0.0	17.8	0.00	<0.05	<0.05	<0.05	0.3	<5.0
	1st Quarter 2006	Week of 3/06/06	11.0	5.86	0.00	21.9	17.1	1.10	0.07	0.62	0.05	6.1	25.0
	2nd Quarter 2006	Week of 6/17/06	9.6	5.23	0.00	6.7	20.9	0.00	0.11	0.16	<0.10	0.6	14.0
0	3rd Quarter 2006	Week of 9/11/06	9.6	5.26	0.00	4.7	20.9	0.00	<0.10	<0.10	<0.10	<0.3	<5.0
l#⁻d	4th Quarter 2006	Week of 12/04/6	10.0	5.57	0.00	18.0	14.4	0.70	<0.10	<0.10	0.20	2.7	22.0
<u>ــــــــــــــــــــــــــــــــــــ</u>	1st Quarter 2007	Week of 2/26/07	9.5	5.23	0.00	3.3	20.4	0.10	<0.10	<0.10	<0.10	6.0	6.0
	2nd Quarter 2007	Week of 6/18/07	8.5	4.62	0.00	38.0	20.6	0.00	<0.10	<0.10	<0.10	1.0	11.0
	3rd Quarter 2007	Week of 8/20/07	9.7	5.32	0.00	42.0	19.7	0.00	<0.10	<0.10	<0.10	1.0	16.0
	4th Quarter 2007	Week of 10/29/07	8.7	4.74	0.00	0.5	19.4	0.00	<0.10	<0.10	<0.10	<0.3	<5.0

Page 3 of 5

NR = Not Required

NM = Not Measured

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GRO (ug/L)	<5.0	13.0	<5.0	0.6	<5.0	11.0	7.2	39.0	<5.0	ないまたの意思を形力	<5.0	0.6	17.0	<5.0	120.0	61.0	6.0	14.0	<5.0	States and the second states and the	<5.0	8.6	27.0	<5.0	18.0	24.0	5.8	30.0	<5.0
Xylene (ug/L)	0.1	3.3	<0.3	1.5	<0.1	1.4	0.7	1.4	<0.3		0.3	2.3	0.5	<0.3	24.0	11.0	0.6	1.0	<0.3	1000万円には、100万円の一日の100万円の100万円の100万円の100万円の100万円の100万円の100万円の100万円の100万円の100万円の100万円の100万円の100万円の100万円	<0.05	1.6	2.4	<0.3	2.4	2.9	0.6	1.3	<0.3
<ul> <li>Ethylben (ug/l<sup>2</sup>)</li> </ul>	<0.05	0.053	<0.10	0.24	<0.10	0.11	<0.10	<0.10	<0.10	語言語なない。	<0.05	0.06	<0.10	0.10	0.28	1.10	<0.10	<0.10	<0.10		<0.05	0.09	0.11	<0.10	0.18	0.20	<0.10	<0.10	<0.10
Toluene: + (ug/L)	<0.05	0.32	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		<0.05	0.21	0.19	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10		<0.05	0.17	0.48	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzene (ug/L)	<0.05	0.06	<0.10	<0.10	<0.10	<0.10	<0.10 -	<0.10	<0.10		<0.05	0.05	0.12	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	のないないないないないので、	<0.05	0.05	0.11	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Carbon Dioxide (%)	0.30	0.40	1.40	1.40	0.70	1.00	0.00	6.20	0.00		0.00	1.40	0.00	0.00	1.60	0.20	0.10	0.00	0.00	四時消滅事業的政治	0.00	1.00	1.00	6.90	1.10	0.20	0.00	0.00	0.10
Oxygen (%)	17.5	20.0	18.8	19.1	14.4	19.0	20.6	14.9	19.4		17.8	18.7	20.9	20.9	18.5	20.4	20.6	19.8	19.4		17.8	19.1	18.1	18.6	18.5	20.2	20.6	19.8	19.4
PID 7	0.0	13.2	2.6	2.8	2.8	5.9	45.0	81.0	0.6		0.2	10.1	6.7	5.7	30.3	18.10	26.0	19.0	0.7		0.1	12.6	19.5	1.8	13.8	4.10	0.79	128.0	0.7
<ul> <li>Pressure</li> <li>(Inches of Water)</li> </ul>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		00.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Depth to Water (ft)	5.55	6.31	5.61	5.69	6.00	5.69	5.17	5.75	5.18		7.38	7.94	7.44	7.48	7.67	7.4	6.82	7.36	6.92		6.24	6.78	6.35	6.33	6.51	6.16	5.63	6.1	5.8
Purge Volume (L)	10.2	11.0	10.3	10.3	10.0	10.4	9.5	10.5	9.5		13.5	15.0	13.6	13.6	14.0	13.5	12.5	13.4	12.7	門の行行に	11.4	12.0	11.6	11.6	11.9	11.3	10.3	11.0	10.0
DATE	Week of 1/09/06	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/6	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	Mook of	1/09/06	Week af 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/6	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07		Week of 1/09/06	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/6	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07
C Sampling -	Pre-Dewater	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	4th Quarter 2007		Pre-Dewater	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	4th Quarter 2007	のないないないであるというないとう	Pre-Dewater	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	4th Quarter 2007
Sample					l#-d	 IL								7	l# - c	1 <b>1</b>								8	:L#- (	ат ———			





NM = Not Measured



Soil Gas Monitoring



NM = Not Measured

NR = Not Required

Page 5 of 5





## **River Terrace**

# **Ground Water Monitoring**

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	od 8015B.	reening. s Table 2a		GRO (mg/L)	66.00	72.00	40.00	98.00	95.00	160.00	70.00	80.00	64.00	ann kitainea	84.00	27.00	42.00	77.00	41.00	94.00	47.00	28.00	22.00
	EPA Meth	Guideline	172	<u>َ</u> آتر (شهرنا)	5 1 90 F	1.2.80 <sup>-1</sup>	1,301	3:50	3:30	3:00		(02:0) (02:0)	1:80		110:2	06.6 - 2	4.90	1.30	1.50	210	<1.00	1.00	1.40
				MTBE (mg/L)	<0.05	<0.12	<0.62	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	に記念したのない	<0.05	<0.12	<0.12	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
	18-12-26-26-26-26-26-26-26-26-26-26-26-26-26	23103	6.0.62	Xylene (mg/L)	123.00	30:00	18:00	1:20:00	1,20.00	32.00	19:00	20:00	, 18:00 E	的出版。他们的	25:00	5,500 S	14.00	15.00	12.00 t	-19.00 S	15.00	4.80	3.70%
	Method 802	20NMAC 61	0175	Ethylben (mg/L)		14.10	3.30 55	3:80	3:20	6.30	4:00	4:20	1.13.80 F	な新設に設定用す	2.4/20	0.51	21802	-2.80	2.40	4:30%	3:80	32.00 S	2:40
	CARLER EPA	WQCC	E 0:75	Toluene (mg/L)	0.05	<0.05	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.001	法院が開始におい	8/705.20	17073	2:40	0.27	<0.10	<0.10	0.32	<0.10	<0.10
	問題で、私		0:01/1	Benzene (mg/L)	1.401	1:50	2:60	3.20	1.60	2:00	₹ 106iF 3	1:20:21	-1:50	<b>的现在分词的</b>	1.6.1015	141 4 50 14 6, 20 4 4	3:60	3:30	1.704	74:30	1.40	0.64 5	1.50 62
				ORP (mV)	NR	186	-15	-20 -20	96	134	185	237	223	がは教室的海北	NR	184	-216	-13	177	171	191	217	217
				(mg/L)	лR	0.83	0.56	0.71	WN	0.65	0.31	4.19	0.49	の時間に見ていた。	NR	9.48	0.94	0.65	2.14	1.45	0.70	1.78	0.85
				TEMP	70.6	52.0	67.3	72.8	57.3	50.3	65.9	74.4	63.4	<b>运行的时间</b> 2020	65.2	53.2	62.8	67.4	53.5	51.4	67.5	71.0	62.4
				Hq	6.92	7.04	6.96	7.00	6.9	6.82	6.93	6.93	6.78	Transferration of	6.85	7.08	6.93	7.03	6.92	6.82	6.87	6.97	6.96
				(umhos/cm)	2034	2233	2372	3053	3631	3825	4907	4661	4123	的成功的建筑和	2225	1802	3586	2531	3548	3783	2576	3771	3507
			rements	Total Well Depth (ft below TOC)	9.38	9.38	9.38	9.38	9.38	9.38	9.38	9.38	9.38	のないないないないない	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92	9.92
2			eld Measu	Depth to Product (ft below TOC)	ddN	ddN	ЧРР	ddN	ddN	ddN	ddN	ddN	ddN	建筑的方法的一些多级有利的方法	NPP	ЧРР	ЧРР	Adv	ЧРР	ddN	MPP	ЧРР	Δ٩Ν
			ΪŢ	Depth to Water (ft below TOC)	5.35	8.04	6.80	5.68	7.42	67.7	5.67	6.24	5.29	ALL REPORTS AND	6.84	9.83	8.27	7.37	9.03	8.86	7.50	.7.3	6.86
				DATE	Week of 8/15/05	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	は三日本のという	Week of 8/15/05	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07
				Sampling Event	Baseline	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	4th Quarter 2007	の一部の日本にはない。	Baseline	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	4th Quarter 2007
				Sample		<u> </u>			۔ <i>ا</i> # د	iT				が設定した。					2# d1				

NR = Not Required

NPP = No Product Present

**Ground Water Monitoring** 

ס	וסמוות אמרכו													The second s	a an a san of a san of a san a		1004
											South States of the	Contraction Delay	V/Method 802	21 Back W.W.		TPH Sci	dci vo po
										,		- WOCC	20NMAC 62	2:31035.44		Guidelines	Table 2at
			ü	eld Measu	Irements						0:01	3.0.75 B	120175	0:62		172	
Sample	Sampling	DATE	Depth to Water	Product	Total Well	E C C	Ha	TEMP3	(jug(te))	ORP <sup>T</sup> (mV)	Benzene (mg/L)	Toluene (mg/L)	Ethylben (mġ/Ľ)	Xylene (mg/L)	MTBE (mg/L)	DRO: (mg/L)	rGRO (mg/L)
LOCALOL	Baseline	Week of 8/15/05	6.61	NPP	12.35	1295	6.85	68.4	R	R	<0.005	<0.005	<0.005	0.0012	<0.0025	<1.00	<0.05
	1st Quarter 2006	Week of 3/06/06	8.09	NPP	12.35	1050	6.94	47.9	0.21	256	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
	2nd Quarter 2006	Week of 6/17/06	7.23	NPP	12.35	856	6.99	62.1	0.98	179	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
	3rd Quarter 2006	Week of 9/11/06	7.41	NPP	12.35	179	6.99	68.0	0.33	233	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
£# dJ	4th Quarter 2006	Week of 12/04/06	7.77	NPP	12.35	673	7.06	54.8	1.32	242	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
L	1st Quarter 2007	Week of 2/26/07	7.52	ΔdN	12.35	839	6.89	47.0	1.65	248	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
	2nd Quarter 2007	Week of 6/18/07	7.02	NPP	12.35	560	6.85	60.8	3.12	211	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
,	3rd Quarter 2007	Week of 8/20/07	7.62	APP	12.35	815	6.97	66.2	2.67	246	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
	4th Quarter 2007	Week of	6 94	ddN	12.35	806	6.87	62.3	3.40	254	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
の行うないないないであった。	4 til Quai tel 2001	のの方向	「東京都になる」という	「日本がない」はあるというです。	生時間にはないなどの形式	<b>"我们的时候,我们的时候,</b>	「日本のないない」	THE REAL PROPERTY IN	推动的影响和	語のないである。	東京は市営業を	語語の語言語を	影響ないたのである	Constant of the	新市市市にある	調査が必要的な	的是历史的现在
The second s	Baseline	Week of 8/15/05	5.91	ЧРР	8.84	923	06.9	68.7	NR	R	0:35	<0.005	1.3150) 1.11	· 121:00	<0.05	1.20	56.00
	1st Ouarter 2006	Week of 3/06/06	7.81	ddN	8.84	747	7.03	54.1	0.52	-51	10.203	<0.02	0.28	20:00	<0.05	<1.00	59.00
	2nd Quarter 2006	Week of 6/17/06	5.24	ddN	8.84	686	6.94	65.3	0.05	39	0.05	<0.001	1:60		<0.025	<3.00	34.00
	3rd Quarter 2006	Week of 9/11/06	5.32	NPP	8.84	879	7.09	71.0	0.29	149	<0.01	<0.01	3.10	16:00	<0.025	<1.00	110.00
9# d.	4th Quarter 2006	Week of 12/04/06	5.95	NPP	8.84	1377	6.99	56.0	1.36	229	0.075	<0.050	1:20	10:00	<0.120	<1.00	50.00
L	1st Quarter 2007	Week of 2/26/07	5.59	APP	8.84	1027	6.87	49.6	0.79	219	<0.01	<0.01	1:30	18:00	<0.025	<1.00	85.00
	2nd Quarter 2007	Week of 6/18/07	6.62	APP	8.84	884	6.87	63.9	0.80	148	034	<0.10	3.50	21.00 ×	<0.25	<1.00	78.00
	3rd Quarter 2007	Week of 8/20/07	6.97	ddN	8.84	911	6.88	69.8	0.17	129	0:30.2	<0.10	3:00	22.00	<0.25	<1.00	69.00
<u> </u>	4th Ouarter 2007	Week of 10/29/07	4.78	ddN	8.84	857	7.04	66.5	0.23	229	<0.001	<0.001	2:603	17:00	<0.0025	1.20	56.00

NPP = No Product Present

NR = Not Required

Page 2 of 7





EPA Method 8015B

EPA Method 8021B

**Ground Water Monitoring** 

reening s.Table 2a		GRO.	26.00	2.70	1.90	5.30	0.48	0.28	0.11	0.19	0.07	の見たいというない	<0.05	NR	NR	NR	NR	NR	0.05	<0.05	<0.05
Guideline	<b>- 1</b> 1.72 三	DRO (mg/L)	1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	国家を見たりない	<1.00	NR	NR	NR	NR	NR	<1.00	<1.00	<1.00
		*MTBE (mg/L)	<0.05	<0.025	<0.025	<0.025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	主要な言語を言語	<0.0025	R	R	NR	NR	R	<0.0025	<0.0025	<0.0025
2.3103	S.C.0.62	Xylene (mg/L)	7:50	0.75	0.35	0.05	<0.003	<0.002	<0.002	<0.002	<0.002	ないのない。	0.0049	R	NR	R	NR	NR	<0.002	<0.002	<0.002
20NMAC 6.	5 0.75 M	Ethylben (mg/L)	2.80	0.18	4.40	0.41	<0.001	<0.001	<0.001	<0.001	<0.001		0.00065	R	RR	R	NR	NR	<0.001	<0.001	<0.001
waco	92;0-24	Toluene. (mg/L)	<0.01	<0.001	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	「「「「「「「「「」」」」	<0.0005	NR	NR	NR	NR	NR	<0.001	<0.001	<0.001
	10:01 01:01	:Benzene (mg/L)	0.28	<0.001	<0.001	0:03	0.01	<0.001	<0.001	<0.001	<0.001	の時代は「日本」	<0.0005	NR	R	NR	NR	NR	<0.001	<0.001	<0.001
		ORP- (mV)	NR	153	94	45	226	253	220	145	177		NR	NR	NR	NR	NR	NR	222	245	253
		(mg/E)	R	0.63	0.38	0.76	1.03	0.72	1.19	0.38	0.53	<b>建立。</b> 這些是這些	NR	NR	NR	NR	NR	NR	0.39	1.01	1.10
		TEMP :	68.2	52.3	66.5	69.4	54.8	47.5	62.2	69.0	63.3	ないないないない	68	NR	NR	NR	NR	NR	59.2	67.6	59.7
		Hd -	6.94	7.35	6.98	7.02	6.95	6.83	6.89	6.89	6.93	語言語の語言	6.89	NR	NR	NR	NR	NR	6.83	7.09	6.89
		E.C. (umhos/cm)	1128	602	1216	2698	1826	1857	1361	1317	1502	「「「「「「「「」」」」	1740	NR	NR	NR	NR	NR	2795	2267	1066
	rements	Total Well Depth (ft below TOC)	9.94	9.94	9.94	9.94	9.94	9.94	9.94	9.94	9.94		9.72	NR	NR	NR	NR	NR	9.72	9.72	9.72
	eld Measu	Depth to Product (ft below TOC)	ЧРР	ΝΡΡ	ЧРР	ddN	NPP	NPP	NPP	NPP	NPP	記述用記述の確定である。	NPP	NR	NR	NR	NR	NR	МРР	NPP	NPP
	Fie	Depth to Water (ft below TOC)	5.78	8.61	6.18	6.17	6.61	6.39	7.32	7.65	5.70	地方の主要が見たいでもないです。	5.72	NR	NR	R	R	R	5.40	6.20	5.42
		DATE	Week of 8/15/05	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	でいたのではない	Week of 8/15/05	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07
		Event	Baseline	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	4th Quarter 2007	<b>新建設</b> 在1999年1999年1999年1999年	Baseline	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	4th Quarter 2007
		Sample					9# 러1					"如果的中心与智慧					/# d.I	-			

NR = Not Required

NPP = No Product Present

Page 3 of 7

1.004 EDvo

**Ground Water Monitoring** 

	reening Table 2a	<b>法</b> 实际	GRO (ma/L)	00 10	20.40	37.00	19.00	57.00	79.00	70.00	35.00	31.00	14.00		1.10	0.09	<0.05	0.72	<0.05	<0.05	<0.05	<0.05	<0.05
	Cuidelines	1.72 25	DRO (mg/L)	100 L		18.00	- 1 <b>6.8</b> 0	- 5:60	1.40	2:10 -	1:20	1.70	1.60	記載が成正に行	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
1. おいのうれたいの、11月1日			MTBE (ma/ù)	30.0	C7-D/	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025		0.027	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
	2.3103	0.6235	Xylene (ma/L)			10:00	- 10° 1	51:60	12:00	13.005	8.60.4		21.50		0.02	<0.003	<0.003	<0.003	<0.003	<0.002	<0.002	<0.002	<0.002
A, MELLIOU, OU	ZONMAC 6	0.7512	Ethylben Z(ma/L)		A STORES	110	0.64	0.58	1.30 N	1.30	0.29	0.48	0.38	語い言語語の語い	<0.003	<0.003	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
- 二日 四部時間の間間	Maco	2.0.75 W	Toluene (ma/L)		cn.nv	<0.10	<0.100	<0.010	<0.010	<0.01	<0.01	<0.01	<0.01	いたので、「「「「「」」」	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
NO PERSONAL PROPERTY OF		10.07E	Benzene		ALCOLO IN CASE	0.35	0.26	<0.01	0.04	<0.01	<0.01	<0.01	<0.01	定れたたの名	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
			ORP.	and the second	YZ	228	143	107	187	208	160	245	185	近代以及に調整法	NR	214	169	219	254	173	224	136	218
			D:O	- A - Ruite	¥	0.61	0.48	0.43	1.56	2.45	1.21	0.36	0.77	花場を読む時代の	R	0.75	0.39	1.09	1.37	0.85	0.31	1.15	0.41
			TEMP	and All Contractor	72.4	52.6	67.6	74.6	57.3	50.5	663	74.4	64.1	の時代にある	62.8	47.8	9.09	64.8	51.9	46.1	58.5	67.5	61.7
			Η		6.94	7.03	7.01	7.03	7.04	6.95	6.92	6.89	6.88		6.92	7.02	7.02	7.04	7.06	6.85	6.90	7.11	6.98
			EC.	(IIII)	1934	1613	2032	2977	1855	2964	2704	3084	2555		1968	1944	1883	1809	2149	2379	2035	1342	875
		Irements	Total Well		9.72	9.72	9.72	9.72	9.72	9.72	9.72	9.72	9.72	<b>等于的时间的。</b>	10.97	10.97	10.97	10.97	10.97	10.97	10.97	10.97	10.97
		eld Measu	Depth to Product		ddN	NPP	ЧРР	APP	ddN	ddN	NPP	NPP	NPP	の語を開始になる語を見たい	NPP	ЧРР	ЧРР	ЧРР	ddN	ЧРР	NPP	ЧЧN	ЧРР
		ïĹ	Depth to Water		6.61	8.92	7.50	6.21	8.21	8.57	6.22	6.67	5.81	のないで、ないでないたが	5.12	5.21	5.26	5.48	5.39	5.07	4.73	5.18	4.94
			DATE	Week of	8/15/05	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	のないのない	Week of 8/15/05	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07
			Sampling		Baseline	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	4th Quarter 2007	中学校 医生产性 化合金化合金化合金化合金化合金化合金化合金化合金化合金化合金化合金化合金化合金化	Baseline	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007	3rd Quarter 2007	4th Quarter 2007
			Sample	Location				•	8# d	L				語を記述は当					6# dJ	L			

NPP = No Product Present

NR = Not Required

Page 4 of 7





# **Ground Water Monitoring**

			i									Macc	20NMAC.6	2.3103		Guidelines	Tāble 2a
			ί.	eld Measu	rements						10:01	0.75	20.75%			1.72	間本でいた
1011日 1月1日日 1月1日日 1月1日日 1月1日日 1月1日 1月1日	amolloo	DATE	Depth to Water	Depth.to	Total Well≑ Depth	E.C.	Hd	TEMP	D.O	ORP	Benzene	Toluene	Ethylben	Xylene	MTBE	DRO	GRO
	Event		(ft below TOC)	(ft below TOC)	(ft.below_TOC)	(umhos/cm)		(°F)	(mg/L)	(mV)	» (mg/L) :	(mg/L)	('mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
	3aseline	Week of 8/15/05	5.10	ddN	9.95	377	6.94	71.2	NR	NR	<0.0005	<0.0005	<0.0005	0.0025	<0.0025	<1.00	<0.05
1 5	Quarter 2006	Week of 3/06/06	5.86	APP	9.95	355	6.39	42.8	1.72	224	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
ק ו	Quarter 2006	Week of 6/17/06	5.23	NPP	9.95	325	7.01	59.8	1.52	168	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
Ιĕ	Quarter 2006	Week of 9/11/06	5.26	NPP	9.95	395	6.97	62.6	0.45	247	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
Ιŝ	Quarter 2006	Week of 12/04/06	5.57	APP	9.95	387	7.00	44.9	1.44	269	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
1 2	Quarter 2007	Week of 2/26/07	5.23	APP	9.95	426	6.85	41.1	3.87	233	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
l g	Quarter 2007	Week of 6/18/07	4.62	NPP	9.95	268	6.86	57.2	7.32	213	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
l E	Quarter 2007	Week of 8/20/07	5.32	NPP	9.95	368	6.98	61.8	1.16	230	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
≞	Quarter 2007	Week of 10/29/07	4.74	ddN	9.95	307	6.90	51.3	2.28	253	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
题	和影響這個的影響	語言を出た語言が	いためにするためためになったの	の語言にあるようななないです。	世界的主要的研究的研究的研究	のないないのであるという	語語語をある	部門は見信書を記	中國法國國家自由的	が上の言語になって	語言語語言語	和社会に対象の	の時に現在が見たい。	No. of the second s	のないのないないない	「東京の新聞新聞」	の語言語の語言である
_	3aseline	Week of 8/15/05	5.67	ddN	9.98	794	6.93	68.2	NR	NR	<0.005	<0.0005	<0.0005	0.0028	<0.0025	<1.00	<0.05
st	Juarter 2006	Week of 3/06/06	6.31	ddN	9.98	851	6.92	45.4	0.24	243	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
l ž	Quarter 2006	Week af 6/17/06	5.61	APP	9.98	551	6.98	62.6	1.11	177	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
Ιp	Quarter 2006	Week of 9/11/06	5.69	ddN	9.98	632	7.06	67.7	0.36	269	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
Ιŝ	Quarter 2006	Week of 12/04/06	6.00	ddN	9.98	738	7.07	52.8	0.97	257	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
1 5	Juarter 2007	Week of 2/26/07	5.69	ddN	9.98	540	6.87	44.2	1.45	262	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
l p	Quarter 2007	Week of 6/18/07	5.17	ddN	9.6	378	6.84	62.5	1.69	217	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
Ιĕ	Quarter 2007	Week of 8/20/07	5.75	ЧРР	9.98	596	7.02	69.4	1.49	226	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
	Turter 2007	Week of	5 18	dan	80 0	541	6 93	56.6	0.59	242	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05

NR = Not Required

NPP = No Product Present

Page 5 of 7



**Ground Water Monitoring** 

)																	
											No.	Construction EPA	Wethod 80	218		EPA Metho	od 8015B
												wace	20NMAC(6.	2.3103		Guidelines	Table 2a
			Fie	eld Measu	rements						0.01	220 <u>75</u>	(10,75%)	0.62		1.72	
Sample	Sampling	DATE	Depth to Water (ft: below TOC)	Depth to Product (ft below TOC)	Total Well Depth (ft below TOC)	Ē.C. (umhos/cm)	-Hd	TEMP: (°E)	(mg/L) (mg/L)	ORP (mV)	Benzene (mg/L)	Toluene (mg/L)	Ethylben (mg/L)	Xylene (mg/L)	MTBE (mg/L)	DRO (mg/L)	GRO (mg/L)
	Baseline	Week of 8/15/05	7.43	NPP	11.79	2143	6.88	64.1	NR	NR	<0.0005	<0.0005	0.00055	0.0042	0.0028	1.00	<0.05
	1st Quarter 2006	Week of 3/06/06	7.94	NPP	11.79	1234	6.91	48.0	0.19	242	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
	2nd Quarter 2006	Week of 6/17/06	7.44	APP	11.79	1171	7.00	55.9	0.26	157	<0.001	<0.001	<0.001	<0.003	0.0049	<1.00	<0.05
ā	3rd Quarter 2006	Week of 9/11/06	7.48	ЧРР	11.79	1875	6.98	60.0	0.91	237	<0.001	<0.001	<0.001	<0.003	0.0081	<1.00	<0.05
۲1# d	4th Quarter 2006	Week of 12/04/06	7.67	ЧРР	11.79	855	6.99	52.8	3.11	252	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
l	1st Quarter 2007	Week of 2/26/07	7.40	ЧРР	11.79	952	6.92	48.2	1.73	205	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
	2nd Quarter 2007	Week of 6/18/07	6.82	ЧРР	11.79	1750	6.81	56.7	2.04	242	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
	3rd Quarter 2007	Week of 8/20/07	6.36	ddN	11.79	2189	6.97	57.1	1.6	238	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
	4th Quarter 2007	Week of 10/29/07	6.92	APP	11.79	1745	6.85	54.3	0.56	271	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
「「「「「「「「」」」」	<b>建筑地址的推进的推进。</b>	記述に記述がない。		State of the second second	1979年の日本の時代である	語言語語語言語	新市場の開催活動	「おおいていた」	同時間をある		政治の認定になる	「「「「「「「「「「」」」」	の時期にはないため	時時時間開始的記述	がはないのないで		「「「「「「」」」
	Baseline	Week of 8/15/05	6.27	ddN	16.09	1226	6.97	58.4	RN	NR	<0.0005	<0.0005	<0.0005	0.0037	<0.0025	<1.00	<0.05
	1st Quarter 2006	Week of 3/06/06	6.78	ΜΡΡ	16.09	508	6.90	46.3	0.28	242	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
	2nd Quarter 2006	Week of 6/17/06	6.35	NPP	16.09	526	7.02	58.6	0.28	240	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
ł	3rd Quarter 2006	Week of 9/11/06	6.33	ddN	16.09	554	6.98	63.9	0.54	244	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
SI# d.	4th Quarter 2006	Week of 12/04/06	6.51	NPP	16.09	515	7.08	53.9	0.97	251	<0.001	<0.001	<0.001	<0.003	<0.0025	<1.00	<0.05
L	1st Quarter 2007	Week of 2/26/07	6.16	ddN	16.09	449	6.97	46.7	1.86	236	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
	2nd Quarter 2007	Week of 6/18/07	5.63	ddN	16.09	563	6.86	56.3	1.43	207	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
	3rd Quarter 2007	Week of 8/20/07	6.17	MPP	16.09	472	7.04	58.3	1.29	220	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05
	4th Quarter 2007	Week of 10/29/07	5.80	NPP	16.09	342	6.99	58.6	0.74	237	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.00	<0.05

NR = Not Required

NPP = No Product Present

Page 6 of 7



## **River Terrace**

EPA Method 8021B

States of

# **Ground Water Monitoring**

			pling ent	eline	ter 2(	rter	Ter	Į	<u>ه</u> [	2	۴ ا	E P	18		۳	Ē	۲ e	1 2	4	Ľ	2
					906	2006	2006	2006	r 2007	r 2007	r 2007	2007	<b>第二十一章</b>	ne /	sr 2006	er 2006	3r 2006	3r 2006	r 2007	r 2007	r 2007
			DATE	Week af 8/15/05	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	四方的市地的	Week of 8/15/05	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07
	ü		Depth to Water (ft below TOC)	6.43	7.91	6.49	6.39	5.58	6.11	5.81	6.71	5.80		9.57	10.07	9.98	9.38	9.16	8.79	8.41	9.30
	Ind Mose	In Inteast	Depth to Product (ft below IOC)	NPP	NPP	NPP	NPP	NPP	NPP	NPP	ddN	NPP	ないためのないない。	ΑdΝ	NPP	NPP	NPP	NPP	NPP	NPP	NPP
	iremente	ILEILIEILIS	Total Well EDepth (ft below TOC)	15.62	15.62	15.62	15.62	15.62	15.62	15.62	15.62	15.62	South States and States	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48
			E.C. (umhos/cm)	1226	2118	2329	2067	2789	3126	2548	1928	1990	<b>发展的空间的空间的空间</b>	2393	961	701	1736	2356	2568	1217	924
			Ηd	6.97	6.95	6.96	7.04	7.01	6.88	6.75	7.05	6.88	の語言語語語の	6.96	7.07	7.01	7.04	7.07	6.90	6.95	6.86
			TEMP (°F)	58.4	50.2	58.0	66.2	52.7	48.1	58.6	65.7	62.9	設定においた	59.8	51.9	57.9	64.4	56.2	48.4	57.5	63.9
			(mg/L)	R	0.75	0.42	0.30	1.24	0.65	4.59	0.27	0.62	「「「「「「「「」」」」	NR	0.33	0.26	0.89	0.78	0.73	0.49	0.52
The Capital States	1418.74	4.65	ORP (mV)	R	-64	143	258	281	235	257	155	294	が調査を	R	190	181	234	295	265	217	192
		The second second	Benzene (mg/L)	<0.001	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<b>新作品性的</b>	0.093	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
- MQCC	0.75a3	Sec. 70 A	Toluene (mg/L).	<0.001	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	記述を正確な	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
20NMAC 6.	0.75	Etter Solax	Ethylben (mg/L)	<0.001	0.041	0.016	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	No. State	0.015	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2:3103	70.65 K	10.07 M	Xylene. (mg/L)	0.0031	0.23	0.12	<0.015	<0.003	<0.002	0.0026	0.01	0.01	の時代の記録の	0.0041	0.0061	<0.003	<0.003	<0.003	<0.002	<0.002	<0.002
		にない「大学の学校	MTBE (mg/L)-	<0.001	<0.012	<0.0025	<0.012	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	のないである	<0.002	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cuideline	1475 C	445771	DRO (mg/L)	RN	2.20	1.60	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	言語などの言語	NR	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00
eening		東京の記録	GRO (mg/L)	RN	2.80	06.0	1.20	0.09	0.29	0.15	0.29	0.06	言語の意識を	NR	0.074	<0.05	0.23	0.081	0.05	<0.05	<0.05

NPP = No Product Present

NR = Not Required

Page 7 of 7

**Groundwater Monitoring - Total Metals** 

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Barrier Barrier Barrier Barrier		MQ CF	C C C	ONMAC 3103 Gr	liead	Mercury	40 ©FR=14	Ar.62) (M©L Cadmium	Solution of the second s	Silvèr	Personal Anti-Anti-Anti-Anti-Anti-Anti-Anti-Anti-
Sampling Activities Date (mg/L)	.Date (mg/L) (mg/L)	<u>(ח)()</u>		(mg/L)	(mg/L)	(mglc)	, (mg/L)	(mg/L)	(mg/L)		
					C I N I N		SCO:O	1990;002]	<u>e 0:05 </u>	E 10:05	な時期で
Baseline 1/04/06 0.62	Week of 0.62 1/04/06	0.62		<0.006	0:038	<0.0002	<0.02	<0.002	<0.05	<0.005	
1st Quarter 2007 Week of NR 2/26/07 NR	Week of NR 2/26/07	NR	_	NR	NR	NR	NR	NR	NR	NR	
2nd Quarter 2007 Week of 0.14 (Annual) 6/18/07 0.14	Vveek of 6/18/07 0.14	0.14 <	• 	<0.006	0,240	NR	NR	NR	NR	NR	
3rd Quarter 2007 Week of NR 8/20/07	Week of NR 8/20/07	NR		NR	+0:074	NR	NR	NR	NR	NR	EP
4th Quarter 2007 Week of NR 10/29/07	Week of NR 10/29/07	NR		NR	0:044	NR	NR	NR	NR	NR	A Me
Baseline 1/04/06 0.85	Week of 0.85	0.85		<0.006	0:016	<0.0002	<0.02	<0.002	<0.05	<0.005	thod
<b>1st Quarter 2007</b> Week of NR 2/26/07	Week of NR 2/26/07	NR		NR	NR	R	NR	NR	NR	NR	601
2nd Quarter 2007 Week of 0.29 6/18/07 0.29	Vveek of 0.29	0.29	ľ	<0.006	0:067	NR	NR	NR	NR	NR	0.& 7
3rd Quarter 2007 Week of NR 8/20/07	Week of NR 8/20/07	NR		NR	0:019	NR	NR	NR	NR	NR	470
4th Quarter 2007 Week of NR 10/29/07	Week of NR 10/29/07	N,		ŇŘ	0.007	NR	NR	NR	NR	NR	
Baseline Vveek of 0.11 0.11	Week of 0.11	0.11		<0.006	0.014	<0.0002	<0.02	<0.002	<0.05	<0.005	
1st Quarter 2007 Week of NR 2/26/07	Week of NR 2/26/07	NR		NR	NR	NR	NR	NR	NR	NR	
2nd Quarter 2007 Week of 0.2 (Annual) 6/18/07 0.2	Vveek of 6/18/07 0.2	0.2		0.008	0.007	NR	NR	NR	NR	NR	
3rd Quarter 2007 Week of NR 8/20/07 NR	Week of NR 8/20/07	NR		NR	0.010	NR	NR	NR	NR	NR	
4th Quarter 2007 Week of NR 10/29/07	Week of NR 10/29/07	NR		NR	<0.005	NR	NR	NR	NR	NR	

NR = Not Required

Page 1 of 6

**Groundwater Monitoring - Total Metals** 

						EP	A Me	ethod	601	0 & 7	470						
	(mg/L)	0:05:	<0.005	NR	NR	NR	NR	<0.005	NR	NR	NR	NR	NR	NR	NR	NR	NR
	Sē: (mg/Ŀ)	0:05	<0.05	NR	NR	NR	NR	<0.05	NR	NR	NR	NR	NR	NR	NR	NR	NR
1.622 (MCL	<pre>/ Čadmium (mg/L))</pre>	0:005	<0.002	NR	NR	NR	NR	<0.002	NR	NR	NR	NR	NR	NR	NR	NR	NR
10,GER. 12	Arsenic (mg/ <u>b</u> )	0:05	<0.02	NR	NR	NR	NR	<0.02	NR	NR	NR	NR	NR	NR	NR	NR	NR
	Mercury (mg/L)	0:002	<0.0002	NR	NR	NR	NR	<0.0002	NR	NR	NR	NR	NR	NR	NR	NR	NR
	(ing/i)	0:015	0.038	NR	60;0	0:044	0:032	0.014	NR	0.03	600.0	<0.005	NR	RN	<0.005	0.006	<0.005
KONMAC 1	Cr (mg/L)	Pio State	<0.006	NR	<0.006	NR	NR	<0.006	NR	<0.006	NR	NR	NR	NR	<0.006	NR	NR
4 WQCC/2	Barium (mg/ <u>t</u> )	2.1	0.45	NR	0.21	NR	NR	0.46	NR	0.38	NR	NR	NR	NR	0.075	NR	NR
	Date		Week of 1/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	Week of 1/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	Week of 1/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07
	Sampling Activities		Baseline	1st Quarter 2007	2nd Quarter 2007 (Annual)	3rd Quarter 2007	4th Quarter 2007	Baseline	1st Quarter 2007	2nd Quarter 2007 (Annual)	3rd Quarter 2007	4th Quarter 2007	Baseline	1st Quarter 2007	2nd Quarter 2007 (Annual)	3rd Quarter 2007	4th Quarter 2007
	Sample			g	# - d.	L		B CTEL THE DESIGN AND THE THE	ç	)# - d.	L			2	# - d	<u>⊥</u>	

Page 2 of 6



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**Groundwater Monitoring - Total Metals** 

						ÈP	A Me	thod	601	Ò&7	470						
	Silver (mg/L)	0:02	<0.005	NR	NR	NR	NR	<0.005	NR	NR	NR	NR	<0.005	NR	NR	NR	NR
	Se (mg/L)	0:05	<0.02	NR	NR	NR	NR	<0.05	NR	NR	NR	NR	<0.05	NR	NR	NR	NR
11.62 (MGL	Cadmium (mg/ <u>b</u> )	0:005	<0.002	NR	NR	NR	NR	<0.002	NR	NR	NR	NR	<0.002	NR	NR	NR	NR
OCER 12	Arsenic (mg/L)	0:05	<0.02	NR	NR	NR	NR	<0.02	NR	NR	NR	NR	<0.02	NR	NR	NR	NR
	Mercury (mg/ <u>b</u> )	0:002	<0.0002	NR	NR	NR	NR	<0.002	NR	NR	NR	NR	<0.0002	NR	NR	NR	NR
	Lead (mg/L)	0:015	0:023	NR	0:054	0:0275	0:30	<0.005	NR	0:020	0.013	<0.005	0.015	NR	0.009	0.006	<0.005
20NMAC 3103	(mg/L)		÷\$0:006	NR	<0.006	NR	NR	<0.006	NR	0.018	NR	NR	0.007	NR	0.024	NR	NR
Wacc/	(Barium) (mg/le)	1.2	2:2	NR	0.44	NR	NR	0.28	NR	0.91	NR	NR	0.46	NR	0.41	NR	NR
	Date		Week of 1/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	Week of 1/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	Week of 1/04/06	Week of 2/26/07	Vveek of 6/18/07	Week of 8/20/07	Week of 10/29/07
	Sampling Activities		Baseline	1st Quarter 2007	2nd Quarter 2007 (Annual)	3rd Quarter 2007	4th Quarter 2007	Baseline	1st Quarter 2007	2nd Quarter 2007 (Annual)	3rd Quarter 2007	4th Quarter 2007	Baseline	1st Quarter 2007	2nd Quarter 2007 (Annual)	3rd Quarter 2007	4th Quarter 2007
	Sample			.8	# - d.	L		Alf address of the state of the	6	# <sup>-</sup> d.	L			0	.#-d	T	

NR = Not Required

Page 3 of 6

**Groundwater Monitoring - Total Metals** 

						E	PA N	letho	d 60	10 &	747	0							
	Silver (mg/E)	0:05	<0.005	NR	NR	NR	NR	<0.005	NR	NR	NR	NR		-0.00	NR	NR	NR	NR	
	, ≥(mg/b).	0:02	<0.05	NR	NR	NR	NR	<0.05	NR	NR	NR	NR		CD-0-	NR	NR	NR	NR	
11.623 (MGL	( <u>Čadmium</u> (+ ( <u>m</u> ġ/ <u>L</u> )	\$00i0x	<0.002	NR	NR	NR	NR	<0.002	NR	NR	NR	NR		700.02	NR	NR	NR	NR	
40 CER 14	Arsenic (mg/L)	10:02	<0.02	NR	NR	NR	NR	<0.02	NR	NR	NR	NR		70.0-	NR	AN	NR	NR	
	Mercury (mg/៤)⇒	0:002	<0.0002	NR	NR	NR	NR	<0.0002	RN	NR	NR	NR		70000	NR	NR	NR	NR	ired
	Lead (mġ/Ŀ)	0:015	0.0093	NR	0:015	0.010	0.006	0:016	NR	0:016	0:021	0.010		C00.04	NR	0.011	0.012	<0.005	= Not Reau
EONMAC 3103	Gr (má/L)	5 ¥0,4	<0.006	NR	0.013	NR	NR	<0.006	NR	0.010	NR	NR		000.07	NR	0.019	NR	NR	NR
Macc /	Barium (mg/L)	<b>运行</b> 2.11-1	0.12	NR	0.33	NR	NR	0.2	NR	0.21	NR	NR		00-1100	NR	0.42	NR	NR	
	Date		Week of 1/04/06	Week of 2/26/07	VVéek of 6/18/07	Week of 8/20/07	Week of 10/29/07	Week of 1/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	Week of	1/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	
	Activities		Baseline	1st Quarter 2007	2nd Quarter 2007 (Annual)	3rd Quarter 2007	4th Quarter 2007	Baseline	1st Quarter 2007	2nd Quarter 2007 (Annual)	3rd Quarter 2007	4th Quarter 2007		Baseline	1st Quarter 2007	2nd Quarter 2007 (Annual)	3rd Quarter 2007	4th Quarter 2007	
	Sample			L	ι#-c	11		Constant of the March of the Ma	2	l#-c	11		and a state of the		3	ι#⁻d	L		

Page 4 of 6

7



**Groundwater Monitoring - Total Metals** 

Sample	Sampling'Activities Baseline	Date Date Week of 1/04/06	MQCC 6.2 8arium (mg/L) 7 0.15	200MMAC 3103 cr cr (mg/L) -(013 <0.006	Lead ( <u>mg/L</u> ) 0.015 <0.005	Mercury (ເກຢ/ຍັງ 00002 <0.0002	40.CER 1/4 Arsenic (mg/U) (005 <0.02	11:62.(MCL Cadmium (m9/L) (0:005 <0.002	) Se (my⊔) (005 <0.05	Silv (mg 0( <0.0
	1st Quarter 2006 2nd Quarter 2006	3/06/06 Week of 6/17/06	NR NR	<0.006 <0.006	<0.005	NR NR	NR NR	NR NR	NR NR	
677	3rd Quarter 2006	Week of 9/11/06	NR	0.006	<0.005	NR	NR	NR	NR	
# - M	4th Quarter 2006	Week of 12/04/06	NR	<0.006	<0.005	NR	NR	NR	NR	
M	1st Quarter 2007	Week of 2/26/07	NR	<0.006	<0.005	NR	NR	NR	NR	
	2nd Quarter 2007 (Annual)	Vveek of 6/18/07	0.064	<0.006	<0.005	NR	NR	NR	NR	2
	3rd Quarter 2007	Week of 8/20/07	NR	NR	<0.005	NR	NR	NR	NR	Z
	4th Quarter 2007	Week of 10/29/07	NR	NR	<0.005	NR	NR	NR	NR	z

NR = Not Required

Page 5 of 6

**Groundwater Monitoring - Total Metals** 

			÷. E	PA	Meth	od 6	6010	& 74	70				
	Silver (mg/L)	0:05	<0.005	NR	NR	NR	NR	RN	NR	NR	NR	NR	
	Se (mg/b)	0:05	<0.05	NR	NR	NR	NR	NR	NR	NR	NR	NR	
1.62 (MCL)	Càdmium (mg/ك)	0:005	<0.002	NR	NR	NR	NR	R	NR	NR	NR	NR	
OCER 14	Arsenic (mg/L)	0:05	<0.02	NR	NR	NR	NR	NR	NR	NR	NR	NR	
4	Mercury (mg/b)	0:002	0:011	0.016	0.021	0.052	0.0047	0.00069	0:002	<0.0002	<0.0002	<0.0002	
	Lead (mg/L)	0:015	<0.005	NR	NR	R R	R	R	<0.005	<0.025	0.009	<0.005	- Not Dogui
ONMAC 1031	Cr (mg/L)	U.O.	<0.006	NR	NR	NR R	R	NR	<0.006	<0.03	NR	NR	
WQCC2 6.2.3	Bariúm (mg/L)		0.45	NR	NR	NR	RN	NR	NR	0.93	NR	NR	
	Date		Week of 1/04/06	Week of 19/06	Week of 3/06/06	Week of 6/17/06	Week of 9/11/06	Week of 12/04/06	Week of 2/26/07	Week of 6/18/07	Week of 8/20/07	Week of 10/29/07	
	Sampling Activities		Baseline	Resample	1st Quarter 2006	2nd Quarter 2006	3rd Quarter 2006	4th Quarter 2006	1st Quarter 2007	2nd Quarter 2007 (Annual)	3rd Quarter 2007	4th Quarter 2007	
	Sample						l# ·	- Ma					

Not Required

Page 6 of 6

## BV Air Pressure 2007

Sample Location	Sampling Activities	Date	Time	Velocity (scfm)	Pressure (psi)
	1st Quarter	2/26/2007	1344	10.0	2.0
BV - 1	2nd Quarter	6/18/2007	1123	10.0	2.0
	3rd Quarter	8/20/2007	1014	12.0	2.0
	4th Quarter	10/29/2007	901	10.0	2.2
· · · · · ·	1st Quarter	2/26/2007	1345	9.0	1.9
BV - 2	2nd Quarter	6/18/2007	1124	4.0	2.0
	3rd Quarter	8/20/2007	1013	6.0	1.9
	4th Quarter	10/29/2007	902	4.0	2.0
BV - 3	1st Quarter	2/26/2007	1348	12.0	1.9
	2nd Quarter	6/18/2007	1125	14.0	1.9
	3rd Quarter	8/20/2007	1010	14.0	1.9
	4th Quarter	10/29/2007	900	16.0	2.0
4 -	1st Quarter	2/26/2007	1347	11.0	1.9
	2nd Quarter	6/18/2007	1003	5.0	2.0
B<	3rd Quarter	8/20/2007	1011	6.0	1.9
	4th Quarter	10/29/2007	859	11.0	2.2
	1st Quarter	2/26/2007	1353	12.0	1.9
ц ,	2nd Quarter	6/18/2007	1120	14.0	1.9
BV	3rd Quarter	8/20/2007	1009	10.0	1.9
	4th Quarter	10/29/2007	850	16.0	2.0
	1st Quarter	2/26/2007	1346	12.0	1.9
9 -	2nd Quarter	6/18/2007	1005	7.0	2.0
BV	3rd Quarter	8/20/2007	1012	10.0	1.9
	4th Quarter	10/29/2007	858	8.0	2.0
	1st Quarter	2/26/2007	1351	12.0	2.0
2-1	2nd Quarter	6/18/2007	1121	13.0	1.9
B S	3rd Quarter	8/20/2007	1008	12.0	1.9
	4th Quarter	10/29/2007	851	12.0	2.1

## BV Air Pressure 2007

Sample Location	Sampling Activities	Date	Time	Velocity (scfm)	Pressure (psi)					
	1st Quarter	2/26/2007	1352	12.0	1.9					
<b>00</b> 1	2nd Quarter	6/18/2007	1119	14.0	1.9					
BV	3rd Quarter	8/20/2007	1000	14.0	1.9					
	4th Quarter	10/29/2007	853	16.0	2.0					
	1st Quarter	2/26/2007	1350	10.0	1.9					
б '	2nd Quarter	6/18/2007	1122	9.0	2.0					
BV	3rd Quarter	8/20/2007	1007	8.0	1.9					
	4th Quarter	10/29/2007	856	8.0	2.0					
BV - 10	1st Quarter	2/26/2007	1354	12.0	1.9					
	2nd Quarter	6/18/2007	1118	14.0	2.0					
	3rd Quarter	8/20/2007	1002	15.0	1.9					
	4th Quarter	10/29/2007	852	14.0	2.0					
	1st Quarter	2/26/2007	1349	12.0	1.9					
- 11	2nd Quarter	6/18/2007	1126	8.0	1.9					
BV	3rd Quarter	8/20/2007	1006	8.0	1.9					
-	4th Quarter	10/29/2007	857	6.0	2.0					
- 12	1st Quarter	2/26/2007	1355	11.0	1.9					
	2nd Quarter	6/18/2007	1117	12.0	1.9					
B	3rd Quarter	8/20/2007	1004	12.0	1.9					
	4th Quarter	10/29/2007	854	14.0	2.1					
~	1st Quarter	2/26/2007	1356	12.0	2.0					
	2nd Quarter	6/18/2007	1116	12.0	1.9					
B<	3rd Quarter	8/20/2007	1005	11.0	1.9					
	4th Quarter	10/29/2007	855	13.0	2.0					
GAC F	ilter Mor	nitoring	۷	EPA Metho VQCC 20NMA	d 8021B VC 6.2.3103		EPA Method 8015E			
-----------------	------------------	----------	--------------------------------------------------------	-----------------------------------------------	------------------------	----------------------------	---------------------	--------------------------	--	--
An	2007 nual Rep	oort	V		C 6.2.3103	0.62	TPH So Guideline	sreening s Tiable 2a.		
Sample	Samplind	DATE	Benzene	Toluene	Ethvlben.	Xviene	DRO	GRO		
Location	Event		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)		
GAC INF	1st Quarter	03/13/07	0.230	0.039	0.860	2.900	<1.0	12.00		
	2nd Quarter	06/20/07	0.350	<0.02	0.730	0.700	1.4	4.80		
	3rd Quarter	07/12/07	0.055	<0.001	0.830	4.100	<1.0	17.00		
	4th Quarter	10/09/07	0.037/ <0.001 0.760 3.900		<1.0	16.00				
		01/11/07	Dewatering pur	nps at MW #48 a	ind DW #2wer	e pulled. Purcl 2/06/07	hased new pur	nps that were		
GAC 2 EFF		02/20/07	<0.001	<0.001	<0.001	<0.003	<1.0	<0.050		
(V-611) North		02/27/07	<0.001 <0.001 <0.002 <1					<0.050		
Filter		03/06/07	Pumps down due to Break and Repair of Discharge Piping							
er of	1st Quarter	03/13/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050		
Pilte		03/26/07	Ρι	imps down due	ediment Load					
ken ead		04/02/07	<0.001 <0.001 <0.001 <0.002		<1.0	<0.050				
s Ta the I		04/12/07		Pumps down b	ecause Fres	h Water Pon	ds are Full			
2 wa Nov		04/16/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050		
/-61; 1 is I		04/25/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050		
len \ /-61	Lead Filter	05/02/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050		
7 Wh 07. V		05/09/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050		
2007 3, 20		05/15/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050		
30, ne13	2nd Quarter	06/20/07	0.0025	<0.001	0.0015	0.002	<1.0	<0.050		
April n Ju	3rd Quarter	07/12/07	0.002	<0.001	0.012	0.078	<1.0	0.28		
o pa		07/23/07	Pu	mps down due	to the San J	uan River Se	ediment Load	1		
Filter plac		08/14/07	<0.001	<0.001	0.002	0.006	<1.0	<0.050		
ead I Id re		09/10/07	<0.001	<0.001	<0.001	<0.002				
he Lr Se ar	4th Quarter	10/09/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050		
ecan ervic		11/08/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050		
ν <u>ñ</u>		12/12/07		Pumps down because Fresh Water Ponds are Full						



GAC Fi	Iter Mor	nitoring	N	EPA Metho	thod 8021B IMAC 6:2/3103		EPA Meth	iod 8015B
Anı	nual Rep	port	0:01	0.75	G 6.2,3103	0.62	IPH Sc Guidelines 1.72	reening s Table 2a
Sample. Location	Sampling Event	DATE	Benzene (mg/L)	Toluene (mg/L)	Ethylben (mg/L)	Xylene (mg/L)	DRO (mg/L)	GRO (mg/L)
GAC 1 EFF		01/03/07	<0.001	<0.001	<0.001	<0.003	6.2	0.093
(V-612)		01/10/07	<0.001	<0.001	<0.001	<0.003	<1.0	<0.050
South Filter		01/11/07	Dewatering pun	nps at MW #48 a	nd DW #2were installed 02	e pulled. Purch /06/07	nased new pun	nps that were
Б		02/08/07	0.003	<0.001	<0.001	<0.003	<1.0	<0.050
ced		02/20/07	0.002	<0.001	<0.001	<0.003	<1.0	<0.050
epla		02/27/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
and r		03/06/07	Pun	scharge Pipir	ng .			
ice	1st Quarter	03/13/07	0.003	<0.001	<0.001	<0.002	<1.0	<0.050
Serv		03/21/07	0.003	<0.001	<0.001	<0.002	1.2	0.051
ut of Filter		03/26/07	Pu	imps down due	to the San J	uan River Se	ediment Load	ł
en O Lag		04/02/07	0.014	<0.001	<0.001	<0.002	<1.0	0.071
Take the		04/12/07		Pumps down b	ecause Fres	h Water Pon	ds are Full	
was Now		04/16/07	0.028	<0.001	<0.001	<0.002	<1.0	0.11
en it v 07.		04/25/07	0.014	<0.001	<0.001	<0.002	<1.0	0.074
Whe 3, 20	2nd Quarter (Laɑ Filter)	6/20/087	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
007 1ne1	3rd Quarter	07/12/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
il 30, 2 Ju		07/23/07	Pu	mps down due	to the San J	uan River Se	ediment Load	i
Apr		08/14/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
Unti		09/10/07	<0.001	<0.001	<0.001	<0.002		
ilter	4th Quarter	10/09/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
ad F		12/12/07		Pumps down b	ecause Fres	h Water Pon	ds are Full	
۔ ۲								

14 A.

# Section 6.0 In-Situ Respiration Test

Title	Tab Number
Tables	6
Figures	7
Appendix A	8

River Terrace Bioventing System 2007 In Situ Respiration Test Summary Giant Refinery – Bloomfield, New Mexico

## INTRODUCTION

## Purpose

In September 2007, Bloomfield Refinery performed an in situ respiration test to evaluate the effectiveness of the River Terrace bioventing system by assessing the in situ biodegradation rates within and near the impacted soil zone. The respiration rate test consisted of monitoring the rate at which oxygen is depleted and carbon dioxide is generated after the air supply is turned off. The in situ respiration test was performed following methods consistent with the sampling regimen described in Soil Bioventing Principles and Practice (Lesson, 1997) and as described in the Bioventing System Monitoring Plan Amendment (MPI, 2006). The 2007 in situ monitoring data was compared to the data collected during the initial in situ respiration test conducted in May 2006 to monitor progress of bioremediation activity within the western portion of the River Terrace over the past 16 months of system operation.

## Background

The objective of a bioventing system is to elevate depressed oxygen concentrations in soil gas in the presence of biodegradable organic compounds, like petroleum hydrocarbons. When petroleum hydrocarbons are introduced to soils, naturally-occurring bacteria use oxygen to metabolize the hydrocarbons for energy and cell growth. Hydrocarbon impacted shallow soils (approximately 0 to 3 feet below grade) are commonly treated under natural conditions because oxygen is constantly replenished from the atmosphere, supporting constant microbial activity. Hydrocarbon releases that penetrate deeper into the subsurface may reach a depth at which the atmosphere is unable to naturally replenish oxygen that is consumed by the microbes as hydrocarbons are consumed. Therefore, in a deeper impacted soil zone, oxygen concentrations in soil gas commonly decrease to near 0 percent (%) by volume while carbon dioxide concentrations increase. Once the oxygen is gone, biodegradation of hydrocarbons by aerobic processes stops.

Bioventing systems are designed to provide adequate oxygen to support continuing aerobic metabolism of organics by soil microbes within the deeper area of the subsurface. Once oxygen levels in soil gas are elevated above 5% by volume through air injection, the concentration of oxygen is no longer limiting the rate at which the biodegradation reaction proceeds. With such abundant oxygen, the concentration of the food source, or hydrocarbon, is usually the factor that determines biodegradation rates.

At the Bloomfield Refinery, a bioventing system was installed to provide oxygen to the subsurface and support aerobic biodegradation of petroleum hydrocarbons that were identified in soil within the western portion of the River Terrace to a depth of approximately 8 feet below existing grade surface (bgs). The bioventing system includes a dewatering system to enhance the effectiveness of the bioventing system by depressing the water table within the influenced area (western portion of the River Terrace) so as to optimize bioremedial activity.

## 2007 IN SITU RESPIRATION TEST

During the week of September 17th, 2007, an in situ respiration test was performed in order to estimate the rate at which oxygen is depleted by microbial activity in the soil following over 20 months of system operation. This was the second in situ test performed since the start-up of the bioventing system. During the respiration test, the supply of oxygen from the engineered system was turned off while the dewatering system remained operational. With no oxygen being added to the subsurface, oxygen, carbon dioxide, and VOC concentrations in soil gas were monitored in the field over a 72-hour period. Oxygen concentration trend graphs were developed to estimate oxygen utilization and biodegradation rates within the soils.

#### **Data Collection**

## Groundwater Level Monitoring

Prior to starting the respiration test, depth-to-groundwater measurements were collected from each of the BV and TP wells within the bioventing system well field. The dewatering system, which consists of two wells (DW-2 and MW-48) each equipped with variable-speed pumps, are used to depress the groundwater elevation within the western portion of the River Terrace area and enhance the effects of the bioventing system.

The groundwater level measurements were used to determine how far to extend dedicated sample tubing into each well casing for soil gas sample collection. Table 1 summarizes the depth-to-groundwater measurements collected prior to initiating the respiration test, and the approximate depth to which the sampling tubing was set for each sampling location.

## Soil Gas Sampling

Initial soil gas samples were collected from each temporary piezometer (TP) within the bioventing area before the air supply was turned off, and then again as soon as possible after the air supply was turned off. The initial baseline samples were collected to ensure the entire well field was sufficiently oxygenated (with oxygen concentrations above 10% by volume) and to be able to calculate the change in oxygen concentration levels over the 72 hour test period.



Typical Set-Up for Soil Gas Sampling With the supply of oxygen from the engineered system turned off, soil gas samples were collected from each BV well (BV-1 through BW-13) and specified TP wells (TP-1, -2, -5, -6, -7, -8, and -9) at a frequency outlined in the Bioventing System Monitoring Plan Amendment letter (MPI, 2006). In order to collect soil gas samples, each sample well was equipped with dedicated Teflon tubing and an air-tight well seal to prevent ambient air from filling the well casing between sample collection intervals. Sample tubing extended down into each well casing to approximately 1 to 3 feet above the groundwater surface (refer to Table 1). Samples collected from different intervals throughout the well field allowed for interpretation of biodegradation rates representative of the entire influence area.

A minimum of three well volumes of soil gas was purged before collecting each soil gas sample. After the soil sample is collected, the end of the dedicated tubing at each well head was sealed to prevent air from being drawn into the well between sample collection events.

Oxygen, carbon dioxide, and volatile organic compound (VOC) concentrations were monitored at each BV and specified TP well using a multi-gas meter and VOC analyzer. Soil gas samples were collected from the TP wells every hour for the first eight hours, and every 12 hours (at a minimum) for the remainder of the 72 hour respiration test. Soil gas samples were collected from each BV well every 12 hours for 72 hours. Soil gas measurements collected at the TP wells and BV wells are summarized in Table 2 and Table 3, respectively.

## ANALYSIS AND CONCLUSIONS

#### **Data Analysis**

The most important data that reflects the in situ biodegradation rate is the rate at which oxygen is consumed by soil microbes, known as the oxygen utilization rate (OUR). The rate at which petroleum hydrocarbons are being degraded in situ is derived from the OUR using stoichiometry and estimates of soil properties at the Site. This in situ biodegradation rate is expressed in terms of the mass of hydrocarbons (in mg) being degraded per unit soil (in kilograms) per unit of time (usually days), or mg/kg-d.

## Oxygen Utilization Rate

Oxygen and carbon dioxide concentration versus time plots were developed for each TP and BV well within the influenced area. A linear trend line was fitted to each  $O_2$  data set using Microsoft Excel. The negative slope of the trend line is interpreted as the oxygen utilization rate, which by using soil properties and stoichiometry, translates into an estimate of the rate at which organics are being





biodegraded by the soil microbes. The oxygen utilization rate trend graphs for each data set are provided in Appendix A. Oxygen concentration levels greater than 5% by volume represent in situ conditions in which oxygen is not limiting the rate of biodegradation.

The  $R^2$  value for each linear regression line reflects how closely the estimated values for the trend line correspond to the actual data. Higher  $R^2$  values are indicators of consistent sample collection techniques. The  $R^2$  values for each data set are included on each respective oxygen utilization rate trend graph (Appendix A).

## Biodegradation Rate

Variables used in calculating the biodegradation rate from the oxidation utilization rate, chemical properties, and soil properties are as follows:

Biodegradation Rate, mg/kg*day	k <sub>b</sub>	Calculated
Oxygen Utilization Rate, %/day	k <sub>o</sub>	from linear regression
Gas-Filled Pore Space, mg3*gas / cm3*soil	□ <sub>a</sub> =	0.25
Density of Oxygen, mg/liter	□ <sub>o2</sub> =	1330
Mass Ratio of Hydrocarbons to Oxygen Required for Mineralization, gm of HC / gm of O <sub>2</sub>	C =	0.283
Soil Bulk Density, gm/cm3	□, =	1,4

Therefore, the biodegradation rate is calculated using the following equation:

Biodegradation Rate	k <sub>b</sub> =	( -k₀ * □ <sub>O2</sub> * □ <sub>a</sub> * C *	
		0.01)	

The biodegradation rate for each data set was calculated using the above equation and calculated OUR. A summary of the biodegradation rates calculated for each TP and BV well are summarized in Table 4.

The calculated biodegradation rate for each monitoring location was plotted on a well location map to show the biodegradation rate distribution throughout the area influenced by the bioventing system (refer to Figure 1).

#### Conclusions

The 2007 in situ monitoring data was reviewed and compared to the data collected during the initial in situ respiration test conducted in May 2006.

Comparison of the two data sets allow for interpretation in progress of bioremediation activity at the River Terrace over the most recent 16 months of system operation. Based on evaluation of the 2007 data collected during the in situ respiration and in situ monitoring results collected in 2006, the following interpretations were made:

## Groundwater Elevation Data

The average depth-to-groundwater measurement prior to staring the 2007 in situ monitoring was approximately 7.5 feet below grade surface (ft bgs). During 2006 in situ monitoring, the average depth-to-groundwater was approximately 7.6 ft. Based on similar drawdown condition when the two in situ monitoring events were conducted, comparative results from the two events allow for interpretation of bioremedial progress within the target area. A comparison of the depth-to-groundwater levels and corresponding soil gas sample interval for each monitoring well is included below.

·					
Well ID	Depth-to- Groundwater (2006)	Depth-to- Groundwater (2007)	Difference between 2006 and 2007 events	Soil Gas Sample Depth (2006)	Soil Gas Sample Depth (2007)
	(ft bgs)	(ft bgs)		(ft bgs)	(ft bgs)
TP-1	6.7	5.9	0.8	5	4.5
TP-2	8.5	7.6	0.9	7.5	6.5
TP-5	7.6	5.2	2.4	6	4.5
TP-6	7.4	5.9	1.5	4	4
TP-7	NA	5.8	NA	NA	5
TP-8	6.8	6.3	0.5	5	5
TP-9	4.3	5.0	-0.7	3	3.5
BV-1	6.2	7	-0.8	4.5	5
BV-2	6.5	7.2	-0.7	5	6
BV-3	8	7.5	0.5	6	6
BV-4	7.1	7.7	-0.6	5	6
BV-5	8.8	8.6	0.2	7	7
BV-6	7	7.7	-0.7	5	6
BV-7	7.1	7.8	-0.7	5	6
BV-8	12.6	12.3	0.3	9	10.5
BV-9	7	7.7	-0.7	5	6.5
BV-10	9.1	9.5	-0.4	7	8
BV-11	7.1	7.8	-0.7	5	6.5
BV-12	9	8.7	0.3	7	7
BV-13	8.2	8.0	0.2	7	6

Groundwater Levels and Soil Gas Sample Interval Summary

Note:

ft bgs = feet below grade surface

Field Soil Gas Data

- Initial oxygen concentrations detected prior to the start of the 2007 respiration test show that the well field was well oxygenated. Similar conditions existed during the 2006 monitoring event. With such abundance of oxygen, the rate at which oxygen was consumed during the test is more reflective of the amount of food source available (hydrocarbons) to the microbes.
- The decreasing concentration (percent by volume) of oxygen and increasing concentration of carbon dioxide over time is a common indicator of biodegradation. The soil gas concentrations detected over the 72 hour monitoring period during the 2007 monitoring event from the TP and BV wells support the continued presence of active biodegradation within the River Terrace area.

# Oxygen Utilization Rates

Oxygen and carbon dioxide concentration versus time plots were developed to determine the oxygen utilization rate at each monitored location. The distribution of the data sorted by oxygen utilization rate revealed that the TPs consistently yielded greater oxidation utilization rates than the BV wells (even though spatial distribution of both well types is about the same). The lag in the oxygen utilization rates, and thus lower biodegradation rates, at the BV wells when compared to rates monitored at adjacent TP wells is likely attributed to how the wells are constructed and the fact that the BV wells serve as the injection point for oxygen. The larger bore hole and filter pack around the BV well casings create a longer diffusion pathway for vapors from the soil to migrate, and thus requires a longer time to equilibrate between the soil formation and the inside of the well bore. In addition, the high flow of air into the subsurface through the BV wells can likely cause contaminants within the vicinity of the BV borehole to be stripped from the adjacent soil matrix, thus resulting in lower microbial activity due to lack of food source (petroleum hydrocarbons) for the microbes.

The TP wells yielded more responsive and representative results because the wells are constructed with smaller diameter well casings and constructed without filter pack. Those features allow for more responsive monitoring of in situ gas changes. Similar results were evident following evaluation of the 2006 respiration test data.

• The linear regression line R<sup>2</sup> (data correlation) value for each data set reflects the precision of the data. The 2007 data correlation values were generally higher than 0.75, with the average correlation value being 0.70. Linear regression lines with R<sup>2</sup> values above 0.7 are considered indicators of good and consistent sample collection techniques. Lower linear regression values may be attributed to the dynamics of the subsurface environment.

## **Biodegradation Rates**

 Based on 2007 in situ respiration results, the average biodegradation rate measured from the BV wells was 0.67 mg/kg-d, with the highest rate detected at BV-6 (1.77 mg/kg-d). The average biodegradation rate from data collected at the TP wells was 1.36 mg/kg-d, with the highest rate detected at TP-5 (3.56)

mg/kg-d). The utilization of oxygen by microbes at TP-9 was not detected (due to a positive OUR value); therefore no biodegradation rate was calculated.

The average biodegradation rate detected at the TP wells decreased by approximately 57% between the 2006 and 2007 respiration test events, with the average biodegradation rate for 2006 and 2007 being 3.16 mg/kg-d and 1.36 mg/kg-d, respectively. Similar conclusions are supported by the average biodegradation rates detected at the BV wells; the average biodegradation rate detected during the 2006 and 2007 test events were 1.82 mg/kg-d and 0.67 mg/kg-d, respectively. The lower biodegradation rates over time are indicators of successful progress in bioremediation in the subsurface. Figure 1 provides a comparison of biodegradation rates detected during the 2006 and 2007 in situ respiration test for each monitored TP and BV well.

- The significantly lower detected biodegradation activity at wells TP-6, TP-7, and TP-9 continue to support the notion that the wells may be positioned outside the influenced area. Refer to additional River Terrace analytical data for additional supporting information based on groundwater and field parameter data collected over time.
- Since the 2006 and 2007 in situ respiration tests were conducted under similar subsurface conditions, the comparative different in the biodegradation rate is most likely the result of a decreased food source (hydrocarbon), thus resulting in low biodegradation activity.

## REFERENCES

- 1. Leeson, A. and R.E. Hinchee. 1997. "Soil Bioventing Principles and Practice," CRC Press. NY.
- 2. Malcolm Pirnie, Inc. (MPI), 2005. "Bioventing System Monitoring Plan (Revised)," Giant Refinery Company Bloomfield, October 28, 2005.
- 3. Malcolm Pirnie, Inc. 2006. "Bioventing System Monitoring Plan Amendment," Giant Refinery Company Bloomfield, May 18, 2006.

7

# Table 1 - Groundwater Level and 2007 In Situ Sampling Depth Summary

River Terrace Bioventing System 2007 In Situ Repiration Test Summary

	Depth to	Soil Gas Sample
	Groundwater	Depth
Well ID	(2007)	(2007)
	(ft bgs)	(ft bgs)
TP-1	5.9	5.0
TP-2	7.6	7.5
TP-5	5.2	6.0
TP-6	5.9	4.0
TP-7	5.8	5.0
TP-8	6.3	5.0
TP-9	5.0	3.0
BV-1	7.0	4.5
BV-2	7.2	5
BV-3	7.5	6
BV-4	7.7	5
BV-5	8.6	7
BV-6	7.7	5
BV-7	7.8	5
BV-8	12.3	9
BV-9	7.7	5
BV-10	9.5	7
BV-11	7.8	5
BV-12	8.7	7
BV-13	8.0	7

Notes:

ft = feet

6

6

bgs = below ground surface

# Table 2 - TP Well Soil Gas Data Summary

## River Terrace Bioventing System 2007 In Situ Respiration Test Summary

\_\_\_\_\_

	TP-1						TP-2						
Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)	Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)		
0	9/17/2007	7 TP-1	18.6	1.0	190.0	0	9/17/2007	TP-2	19.7	0.1	0.0		
· 1	9/17/2007	7 TP-1	18.3	2.0	201.0	1	9/17/2007	TP-2	19.4	0.1	0.2		
2	9/17/2007	7 TP-1	18.3	1.3	122.0	2	9/17/2007	TP-2	19.3	0.1	0.0		
3	9/17/2007	TP-1	17.5	1.5	161.0	3	9/17/2007	TP-2	19.2	0.2	0.0		
4	9/17/2007	TP-1	16.7	1.5	199.0	4	9/17/2007	TP-2	18.9	0.3	0.0		
5	9/17/2007	TP-1	17.1	1.1	73.0	5	9/17/2007	TP-2	18.9	0.2	2.4		
6	9/17/2007	TP-1	16.7	1.3	62.1	6	9/17/2007	TP-2	18.9	0.3	0.0		
7	9/17/2007	TP-1	16.7	1.2	51.5	7	9/17/2007	TP-2	19.0	0.3	0.4		
. 8	9/17/2007	TP-1	16.7	1.0	35.2	8	9/17/2007	TP-2	18.9	0.3	0.4		
10	9/17/2007	TP-1	16.6	1.4	38.7	10	9/17/2007	TP-2	18.7	0.3	0.3		
23	9/18/2007	TP-1	14.7	2.8	38.8	23	9/18/2007	TP-2	18.3	0.6	0.1		
36	9/18/2007	TP-1	13.6	3.4	169.0	36	9/18/2007	TP-2	· 16.6	0.9	2.8		
48	9/19/2007	TP-1	14.4	3.2	77.9	48	9/19/2007	TP-2	16	1.3	0.7		
60	9/19/2007	TP-1	12.1	4.5	465.0	60	9/19/2007	TP-2	13.9	1.7	1.6		
72	9/20/2007	TP-1	13.9	4.2	380.0	72	9/20/2007	TP-2	13.3	2.1	0.8		
		TP-5						TP-6	5				
Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)	Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)		
0	9/17/2007	TP-5	18.7	0.8	757.0	0	9/17/2007	TP-6	19.2	0.5	0.0		
· 1	9/17/2007	TP-5	19.0	0.3	81.0	1	9/17/2007	ТР-6	19.1	0.5	5.7		
2	9/17/2007	TD 5					, , , , <b>, , , , , , , , , , , , , , , </b>	** 0	1 2 . 1	0.5			
	71172007	1P-3	19.2	0.2	38.5	2	9/17/2007	TP-6	18.9	0.5	1.4		
3	9/17/2007	TP-5	19.2 19.0	0.2 0.2	38.5 39.3	2 3	9/17/2007 9/17/2007	TP-6 TP-6	18.9 18.7	0.5 0.6	1.4 7.0		
3 4	9/17/2007 9/17/2007 9/17/2007	TP-5 TP-5	19.2 19.0 18.9	0.2 0.2 0.5	38.5 39.3 36.4	2 3 4	9/17/2007 9/17/2007 9/17/2007	TP-6 TP-6 TP-6	18.9 18.7 18.7	0.5 0.6 0.6	1.4 7.0 10.2		
3 4 5	9/17/2007 9/17/2007 9/17/2007 9/17/2007	TP-5 TP-5 TP-5	19.2 19.0 18.9 19.4	0.2 0.2 0.5 0.1	38.5 39.3 36.4 4.2	2 3 4 5	9/17/2007 9/17/2007 9/17/2007 9/17/2007	TP-6 TP-6 TP-6 TP-6	18.9 18.7 18.7 18.7	0.5 0.6 0.6 0.6	1.4 7.0 10.2 3.8		
3 4 5 6	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007	TP-5 TP-5 TP-5 TP-5	19.2 19.0 18.9 19.4 19.4	0.2 0.2 0.5 0.1 0.2	38.5 39.3 36.4 4.2 2.3	2 3 4 5 6	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007	TP-6 TP-6 TP-6 TP-6 TP-6	18.9 18.7 18.7 18.7 18.7 18.7	0.5 0.6 0.6 0.6 0.7	1.4 7.0 10.2 3.8 2.7		
3 4 5 6 7	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007	TP-5 TP-5 TP-5 TP-5 TP-5 TP-5	19.2 19.0 18.9 19.4 19.4 19.7	0.2 0.2 0.5 0.1 0.2 0.2	38.5 39.3 36.4 4.2 2.3 3.1	2 3 4 5 6 7	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007	TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6	18.9 18.7 18.7 18.7 18.7 18.7 18.8	0.5 0.6 0.6 0.6 0.7 0.8	1.4 7.0 10.2 3.8 2.7 6.0		
3 4 5 6 7 8	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007	TP-5 TP-5 TP-5 TP-5 TP-5 TP-5 TP-5	19.2 19.0 18.9 19.4 19.4 19.7 19.7	0.2 0.2 0.5 0.1 0.2 0.2 0.2	38.5 39.3 36.4 4.2 2.3 3.1 1.8	2 3 4 5 6 7 8	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007	TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6	18.9 18.7 18.7 18.7 18.7 18.7 18.8 18.8	0.5 0.6 0.6 0.7 0.8 0.8	1.4 7.0 10.2 3.8 2.7 6.0 2.0		
3 4 5 6 7 8 10	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007	TP-5 TP-5 TP-5 TP-5 TP-5 TP-5 TP-5	19.2 19.0 18.9 19.4 19.4 19.7 19.7 19.7	0.2 0.2 0.5 0.1 0.2 0.2 0.2 0.0	38.5 39.3 36.4 4.2 2.3 3.1 1.8 1.2	2 3 4 5 6 7 8 10	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007	TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6	18.9 18.7 18.7 18.7 18.7 18.8 18.8 18.8 18.8	0.5 0.6 0.6 0.6 0.7 0.8 0.8 0.7	1.4 7.0 10.2 3.8 2.7 6.0 2.0 3.7		
3 4 5 6 7 8 10 23	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007	TP-5 TP-5 TP-5 TP-5 TP-5 TP-5 TP-5 TP-5	19.2 19.0 18.9 19.4 19.4 19.7 19.7 19.7 20.3	0.2 0.2 0.5 0.1 0.2 0.2 0.2 0.0 0.1	38.5 39.3 36.4 4.2 2.3 3.1 1.8 1.2 0.3	2 3 4 5 6 7 8 10 23	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007	TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6	18.9 18.7 18.7 18.7 18.7 18.8 18.8 18.8 18.8	0.5 0.6 0.6 0.7 0.8 0.8 0.7 0.8	1.4 7.0 10.2 3.8 2.7 6.0 2.0 3.7 0.5		
3 4 5 6 7 8 10 23 36	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007 9/18/2007	TP-5 TP-5 TP-5 TP-5 TP-5 TP-5 TP-5 TP-5	19.2 19.0 18.9 19.4 19.4 19.7 19.7 19.7 20.3 11.8	0.2 0.2 0.5 0.1 0.2 0.2 0.2 0.0 0.1 4.3	38.5 39.3 36.4 4.2 2.3 3.1 1.8 1.2 0.3 832.0	2 3 4 5 6 7 8 10 23 36	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007 9/18/2007	TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6	18.9 18.7 18.7 18.7 18.7 18.8 18.8 18.8 18.8	0.5 0.6 0.6 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.8	1.4 7.0 10.2 3.8 2.7 6.0 2.0 3.7 0.5 25		
3 4 5 6 7 8 10 23 36 48	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007	TP-5 TP-5 TP-5 TP-5 TP-5 TP-5 TP-5 TP-5	19.2 19.0 18.9 19.4 19.4 19.7 19.7 20.3 11.8 7.6	0.2 0.2 0.5 0.1 0.2 0.2 0.2 0.0 0.1 4.3 7.3	38.5 39.3 36.4 4.2 2.3 3.1 1.8 1.2 0.3 832.0 1048.0	2 3 4 5 6 7 8 10 23 36 48	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007	TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6	18.9 18.7 18.7 18.7 18.7 18.8 18.8 18.8 18.8	0.5 0.6 0.6 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.8 0.9	1.4 7.0 10.2 3.8 2.7 6.0 2.0 3.7 0.5 25 1.9		
3 4 5 6 7 8 10 23 36 48 60	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007	TP-5 TP-5 TP-5 TP-5 TP-5 TP-5 TP-5 TP-5	19.2 19.0 18.9 19.4 19.4 19.7 19.7 20.3 11.8 7.6 6.1	$\begin{array}{c} 0.2\\ 0.2\\ 0.5\\ 0.1\\ 0.2\\ 0.2\\ 0.2\\ 0.0\\ 0.1\\ 4.3\\ 7.3\\ 7.3\\ 7.3\end{array}$	38.5 39.3 36.4 4.2 2.3 3.1 1.8 1.2 0.3 832.0 1048.0 2715.0	2 3 4 5 6 7 8 10 23 36 48 60	9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007	TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6 TP-6	18.9 18.7 18.7 18.7 18.7 18.8 18.8 18.8 19.3 18.6 19 18.3	0.5 0.6 0.6 0.7 0.8 0.7 0.8 0.7 0.8 0.7 0.8 0.8 0.9 0.8	1.4 7.0 10.2 3.8 2.7 6.0 2.0 3.7 0.5 25 1.9 1.5		

# Table 2 - TP Well Soil Gas Data Summary

River Terrace Bioventing System 2007 In Situ Respiration Test Summary

		TP-7	1			TP-8						
Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)	Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)	
0	9/17/2007	TP-8	18.7	1.3	9	0	9/17/2007	TP-9	19.7	0.1	705	
1	9/17/2007	TP-8	18.7	1.1	5.1	1	9/17/2007	TP-9	19.4	0.1	5.0	
. 2	9/17/2007	TP-8	19.0	0.9	7.9	2	9/17/2007	TP-9	19.2	0.1	4.1	
3	9/17/2007	TP-8	18.9	1.2	45.4	3	9/17/2007	TP-9	19.1	0.1	102	
4	9/17/2007	TP-8	18.9	0.2	- 1.1	4	9/17/2007	TP-9	18.9	0.2	101	
5	9/17/2007	TP-8	19.4	0.1	1	5	9/17/2007	TP-9	19.0	0.2	2.7	
6	9/17/2007	TP-8	19.4	0,2	0.7	6	9/17/2007	TP-9	18.7	0.2	1.9	
7	. 9/17/2007	TP-8	19.7	0.1	0.9	7	9/17/2007	TP-9	18.7	0.2	3.4	
8	9/17/2007	TP-8	19.7	0.1	1.3	8	9/17/2007	TP-9	18.9	0.2	2.5	
10	9/17/2007	TP-8	19.7	0.1	0.5	10	9/17/2007	TP-9	18.7	0.2	3.1	
23	9/18/2007	TP-8	19.2	1.2	2.2	23	9/18/2007	TP-9	17.9	0.3	0.9	
36	9/18/2007	TP-8	18.7	1.2	36.1	36	9/18/2007	TP-9	16	0.3	0.7	
48	9/19/2007	TP-8	19.3	1.1	105	48	9/19/2007	TP-9	14.6	0.5	1.1	
60	9/19/2007	TP-8	18.4	1	72.8	60	9/19/2007	TP-9	12.5	0.7	1.5	
72	9/20/2007	TP-8	19.2	1.2	87.3	72	9/20/2007	TP-9	10.4	1.1	3.2	
		TP-9	)									
Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)							
	0/17/2007	TD 0	10.7	0.1	0.5							
0	9/17/2007	1P-8 TD 9	19.7	0.1	· 65							
1	9/17/2007	11-0 TD 0	19.7	0.1	16.0							
2	9/17/2007	TD 0	19.4	0.1	32.1							
3 A	0/17/2007	TD 8	19.4	0.1	11.5							
+ 5	9/17/2007	TP_8	19.3	0.2	24.0							
6	9/17/2007	TP-8	19.5	0.1	0.9		•					
7	9/17/2007	TP-8	19.7	0.1	1.0							
, 8	9/17/2007	TP-8	19.6	0.1	0.4							
10	9/17/2007	TP-8	19.7	0.1	0.4							
23	9/18/2007	TP-8	20.3	0.1	3.5							
36	9/18/2007	TP-8	19.7	0.2	104							
48	9/19/2007	TP-8	20.5	0.1	20.5							
60	9/19/2007	TP-8	19.4	0.1	185							
72	9/20/2007	TP-8	20.1	0.1	174							

Notes:

hr = hour

% = percent by volume

ppm = parts per million

# Table 3 - BV Well Soil Gas Data Summary

River Terrace Bioventing System 2007 In Sity Respiration Test

		BV-1						BV-2			
Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)	Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)
0	9/17/2007	BV-1	21.1	NM	NM	0	9/17/2007	BV-2	21.1	NM	NM
12	9/17/2007	BV-1	19.7	0.1	0.7	12	9/17/2007	BV-2	18.9	0.1	2.1
24	9/18/2007	BV-1	19.3	0.1	0.9	24	9/18/2007	BV-2	19.0	0.1	0.8
36	9/18/2007	BV-1	18.7	0.1	18.8	36	9/18/2007	BV-2	18.2	0.1	0.7
48	9/19/2007	BV-1	19.0	0.1	63.7	48	9/19/2007	BV-2	18.0	0.2	1.2
60	9/19/2007	BV-1	18.2	0.1	33.3	60	9/19/2007	BV-2	16.0	0.2	1.9
72	9/20/2007	BV-1	18.7	0.2	50.8	72	9/20/2007	BV-2	16.7	0.3	1.8
[	<u> </u>	BV-3						BV-4			
Hour Into						Hour Into					
Testing	Date of	Sample	02	CO2	VOCs	Testing	Date of	Sample	02	CO2	VOCs
(hr)	Collection	Location	(%)	(%)	(ppm)	(hr)	Collection	Location	(%)	(%)	(ppm)
0	9/17/2007	BV-3	21.1	NM	NM	0	9/17/2007	BV-4	21.1	NM	NM
12	9/17/2007	BV-3	19.7	0.1	1.1	12	9/17/2007	BV-4	18.9	0.1	3.0
24	9/18/2007	BV-3	19.0	0.1	0.6	24	9/18/2007	BV-4	18.6	0.1	0.9
36	9/18/2007	BV-3	18.2	0.1	15	36	9/18/2007	BV-4	17.0	0.1	2.8
48	9/19/2007	BV-3	18.5	0.1	33.5	48	9/19/2007	BV-4	16.6	0.2	2.7
60	9/19/2007	BV-3	17.6	0.1	29.4	60	9/19/2007	BV-4	14.7	0.3	3.1
72	9/20/2007	BV-3	18.2	0.1	27.8	72	9/20/2007	BV-4	15.0	0.3	3.1
		BV-5					······	<b>BV-6</b>			
Hour Into Testing (hr)	Date of Collection	BV-5 Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)	Hour Into Testing (hr)	Date of Collection	BV-6 Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)
Hour Into Testing (hr)	Date of Collection 9/17/2007	BV-5 Sample Location BV-5	<b>O2</b> (%) 21.1	CO2 (%)	VOCs (ppm)	Hour Into Testing (hr) 0	Date of Collection 9/17/2007	BV-6 Sample Location BV-6	<b>O2</b> (%)	CO2 (%)	VOCs (ppm)
Hour Into Testing (hr) 0 12	Date of Collection 9/17/2007 9/17/2007	BV-5 Sample Location BV-5 BV-5	O2 (%) 21.1 19.7	CO2 (%) NM 0.1	VOCs (ppm) NM 0.4	Hour Into Testing (hr) 0 12	Date of Collection 9/17/2007 9/17/2007	BV-6 Sample Location BV-6 BV-6	O2 (%) 21.1 18.7	CO2 (%) NM 0.0	VOCs (ppm) NM 2.8
Hour Into Testing (hr) 0 12 24	Date of Collection 9/17/2007 9/17/2007 9/18/2007	BV-5 Sample Location BV-5 BV-5 BV-5	<b>O2</b> (%) 21.1 19.7 19.9	CO2 (%) NM 0.1 0.1	VOCs (ppm) NM 0.4 0.3	Hour Into Testing (hr) 0 12 24	Date of Collection 9/17/2007 9/17/2007 9/18/2007	BV-6 Sample Location BV-6 BV-6 BV-6	O2 (%) 21.1 18.7 18.0	CO2 (%) NM 0.0 0.2	VOCs (ppm) NM 2.8 0.8
Hour Into Testing (hr) 0 12 24 36	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007	BV-5 Sample Location BV-5 BV-5 BV-5 BV-5	<b>O2</b> (%) 21.1 19.7 19.9 18.9	CO2 (%) NM 0.1 0.1 0.1	<b>VOCs</b> (ppm) NM 0.4 0.3 6.9	Hour Into Testing (hr) 0 12 24 36	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007	BV-6 Sample Location BV-6 BV-6 BV-6 BV-6 BV-6	O2 (%) 21.1 18.7 18.0 16.1	CO2 (%) NM 0.0 0.2 0.2	VOCs (ppm) NM 2.8 0.8 1.2
Hour Into Testing (hr) 0 12 24 36 48	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007	BV-5 Sample Location BV-5 BV-5 BV-5 BV-5 BV-5 BV-5	O2 (%) 21.1 19.7 19.9 18.9 18.9	CO2 (%) NM 0.1 0.1 0.1 0.1	VOCs (ppm) NM 0.4 0.3 6.9 24.4	Hour Into Testing (hr) 0 12 24 36 48	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/18/2007 9/19/2007	BV-6 Sample Location BV-6 BV-6 BV-6 BV-6 BV-6 BV-6	O2 (%) 21.1 18.7 18.0 16.1 14.8	CO2 (%) NM 0.0 0.2 0.2 0.4	VOCs (ppm) NM 2.8 0.8 1.2 1.4
Hour Into Testing (hr) 0 12 24 36 48 60	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007	BV-5 Sample Location BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-5	O2 (%) 21.1 19.7 19.9 18.9 18.9 18.0	CO2 (%) NM 0.1 0.1 0.1 0.1 0.2	VOCs (ppm) NM 0.4 0.3 6.9 24.4 22.5	Hour Into Testing (hr) 0 12 24 36 48 60	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007	BV-6 Sample Location BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6	O2 (%) 21.1 18.7 18.0 16.1 14.8 12.8	CO2 (%) NM 0.0 0.2 0.2 0.4 0.6	VOCs (ppm) NM 2.8 0.8 1.2 1.4 1.6
Hour Into Testing (hr) 0 12 24 36 48 60 72	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007	BV-5 Sample Location BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-5	O2 (%) 21.1 19.7 19.9 18.9 18.9 18.0 18.0	CO2 (%) NM 0.1 0.1 0.1 0.1 0.2 0.2	VOCs (ppm) NM 0.4 0.3 6.9 24.4 22.5 20.7	Hour Into Testing (hr) 0 12 24 36 48 60 72	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007	BV-6 Sample Location BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6	O2 (%) 21.1 18.7 18.0 16.1 14.8 12.8 12.3	CO2 (%) NM 0.0 0.2 0.2 0.4 0.6 0.8	VOCs (ppm) NM 2.8 0.8 1.2 1.4 1.6 2.9
Hour Into Testing (hr) 0 12 24 36 48 60 72	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007	BV-5 Sample Location BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-5	O2 (%) 21.1 19.7 19.9 18.9 18.9 18.0 18.0	CO2 (%) NM 0.1 0.1 0.1 0.1 0.2 0.2	VOCs (ppm) NM 0.4 0.3 6.9 24.4 22.5 20.7	Hour Into Testing (hr) 0 12 24 36 48 60 72	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007	<b>BV-6</b> <b>Sample</b> <b>Location</b> <b>BV-6</b> <b>BV-6</b> <b>BV-6</b> <b>BV-6</b> <b>BV-6</b> <b>BV-6</b> <b>BV-6</b> <b>BV-6</b> <b>BV-6</b> <b>BV-6</b>	O2 (%) 21.1 18.7 18.0 16.1 14.8 12.8 12.3	CO2 (%) NM 0.0 0.2 0.2 0.4 0.6 0.8	VOCs (ppm) NM 2.8 0.8 1.2 1.4 1.6 2.9
Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr)	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007 9/20/2007 Date of Collection	BV-5 Sample Location BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-7 Sample Location	O2 (%) 21.1 19.7 19.9 18.9 18.0 18.0 18.0 02 (%)	CO2 (%) NM 0.1 0.1 0.1 0.1 0.2 0.2 CO2 (%)	VOCs (ppm) NM 0.4 0.3 6.9 24.4 22.5 20.7 VOCs (ppm)	Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr)	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007 Date of Collection	BV-6 Sample Location BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6	O2 (%) 21.1 18.7 18.0 16.1 14.8 12.8 12.3 O2 (%)	CO2 (%) NM 0.0 0.2 0.2 0.4 0.6 0.8 CO2 (%)	VOCs (ppm) NM 2.8 0.8 1.2 1.4 1.6 2.9 VOCs (ppm)
Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007 9/20/2007 Date of Collection 9/17/2007	BV-5 Sample Location BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-7 Sample Location	O2 (%) 21.1 19.7 19.9 18.9 18.9 18.0 18.0 18.0 21.1	CO2 (%) NM 0.1 0.1 0.1 0.1 0.2 0.2 CO2 (%)	VOCs (ppm) NM 0.4 0.3 6.9 24.4 22.5 20.7 VOCs (ppm) NM	Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007 9/20/2007 Date of Collection 9/17/2007	BV-6 Sample Location BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6	O2 (%) 21.1 18.7 18.0 16.1 14.8 12.8 12.3 O2 (%) 21.1	CO2 (%) NM 0.0 0.2 0.2 0.4 0.6 0.8 CO2 (%) NM	VOCs (ppm) NM 2.8 0.8 1.2 1.4 1.6 2.9 VOCs (ppm) NM
Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0 12	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007 9/20/2007 Date of Collection 9/17/2007 9/17/2007	BV-5 Sample Location BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-7 BV-7 BV-7	O2 (%) 21.1 19.7 19.9 18.9 18.9 18.0 18.0 18.0 (%) O2 (%) 21.1 18.2	CO2 (%) NM 0.1 0.1 0.1 0.1 0.2 0.2 CO2 (%) NM 1.0	VOCs (ppm) NM 0.4 0.3 6.9 24.4 22.5 20.7 VOCs (ppm) NM 11.8	Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0 12	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007 Date of Collection 9/17/2007 9/17/2007	BV-6 Sample Location BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6	O2 (%) 21.1 18.7 18.0 16.1 14.8 12.8 12.3 02 (%) 21.1 19.7	CO2 (%) NM 0.0 0.2 0.2 0.4 0.6 0.8 CO2 (%) NM 0.1	VOCs (ppm) NM 2.8 0.8 1.2 1.4 1.6 2.9 VOCs (ppm) NM 0.4
Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0 12 24	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007 9/20/2007 9/20/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007	BV-5 Sample Location BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-7 Sample Location BV-7 BV-7 BV-7	O2 (%) 21.1 19.7 19.9 18.9 18.9 18.0 18.0 18.0 (%) 21.1 18.2 19.3	CO2 (%) NM 0.1 0.1 0.1 0.2 0.2 CO2 (%) NM 1.0 0.7	VOCs (ppm) NM 0.4 0.3 6.9 24.4 22.5 20.7 VOCs (ppm) NM 11.8 10.0	Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0 12 24	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/20/2007 9/20/2007 Date of Collection 9/17/2007 9/17/2007 9/18/2007	BV-6 Sample Location BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-8 Location BV-8 BV-8 BV-8	O2 (%) 21.1 18.7 18.0 16.1 14.8 12.8 12.3 02 (%) 21.1 19.7 19.0	CO2 (%) NM 0.0 0.2 0.2 0.4 0.6 0.8 CO2 (%) NM 0.1 0.1	VOCs (ppm) NM 2.8 0.8 1.2 1.4 1.6 2.9 VOCs (ppm) NM 0.4 0.9
Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0 12 24 36	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/20/2007 9/20/2007 9/20/2007 9/20/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007 9/18/2007	BV-5 Sample Location BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-7 Sample Location BV-7 BV-7 BV-7 BV-7	O2 (%) 21.1 19.7 19.9 18.9 18.9 18.0 18.0 18.0 (%) 21.1 18.2 19.3 18.0	CO2 (%) NM 0.1 0.1 0.1 0.2 0.2 CO2 (%) NM 1.0 0.7 1.1	VOCs (ppm) NM 0.4 0.3 6.9 24.4 22.5 20.7 VOCs (ppm) NM 11.8 10.0 10.8	Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0 12 24 36	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/20/2007 9/20/2007 Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007	BV-6 Sample Location BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-8 BV-8 BV-8 BV-8 BV-8 BV-8	O2 (%) 21.1 18.7 18.0 16.1 14.8 12.8 12.3 02 (%) 21.1 19.7 19.0 17.8	CO2 (%) NM 0.0 0.2 0.2 0.4 0.6 0.8 CO2 (%) NM 0.1 0.1 0.2	VOCs (ppm) NM 2.8 0.8 1.2 1.4 1.6 2.9 VOCs (ppm) NM 0.4 0.9 8.0
Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0 12 24 36 48	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/20/2007 9/20/2007 9/20/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007	BV-5 Sample Location BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-5 BV-7 BV-7 BV-7 BV-7 BV-7 BV-7 BV-7	O2 (%) 21.1 19.7 19.9 18.9 18.0 18.0 18.0 18.0 (%) 21.1 18.2 19.3 18.0 9.0	CO2 (%) NM 0.1 0.1 0.1 0.1 0.2 0.2 CO2 (%) NM 1.0 0.7 1.1 0.8	VOCs (ppm) NM 0.4 0.3 6.9 24.4 22.5 20.7 VOCs (ppm) NM 11.8 10.0 10.8 27.1	Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0 12 24 36 48	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007 9/20/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007	BV-6 Sample Location BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-8 BV-8 BV-8 BV-8 BV-8 BV-8 BV-8 BV-8	O2 (%) 21.1 18.7 18.0 16.1 14.8 12.3 12.3 O2 (%) 21.1 19.7 19.0 17.8 18.0	CO2 (%) NM 0.0 0.2 0.2 0.4 0.6 0.8 CO2 (%) NM 0.1 0.1 0.2 0.3	VOCs (ppm) NM 2.8 0.8 1.2 1.4 1.6 2.9 VOCs (ppm) NM 0.4 0.9 8.0 15.8
Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0 12 24 36 48 60	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/20/2007 9/20/2007 9/20/2007 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/18/2007 9/19/2007	<b>BV-5</b> <b>Sample</b> <b>Location</b> <b>BV-5</b> <b>BV-5</b> <b>BV-5</b> <b>BV-5</b> <b>BV-5</b> <b>BV-5</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b> <b>BV-7</b>	O2 (%) 21.1 19.7 19.9 18.9 18.0 18.0 18.0 21.1 18.2 19.3 18.0 9.0 16.7	CO2 (%) NM 0.1 0.1 0.1 0.1 0.2 0.2 CO2 (%) NM 1.0 0.7 1.1 0.8 1.7	VOCs (ppm) NM 0.4 0.3 6.9 24.4 22.5 20.7 VOCs (ppm) NM 11.8 10.0 10.8 27.1 28.8	Hour Into Testing (hr) 0 12 24 36 48 60 72 Hour Into Testing (hr) 0 12 24 36 48 60	Date of Collection 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007 9/20/2007 9/20/2007 9/17/2007 9/17/2007 9/17/2007 9/18/2007 9/18/2007 9/19/2007 9/19/2007	BV-6 Sample Location BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-6 BV-8 BV-8 BV-8 BV-8 BV-8 BV-8 BV-8 BV-8	O2 (%) 21.1 18.7 18.0 16.1 14.8 12.8 12.3 O2 (%) 21.1 19.7 19.0 17.8 18.0 16.6	CO2 (%) NM 0.0 0.2 0.2 0.4 0.6 0.8 CO2 (%) NM 0.1 0.1 0.2 0.3 0.5	VOCs (ppm) NM 2.8 0.8 1.2 1.4 1.6 2.9 VOCs (ppm) NM 0.4 0.9 8.0 15.8 17.4

# Table 3 - BV Well Soil Gas Data Summary

		BV-9						BV-10			
Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)	Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)
0	9/17/2007	BV-9	21.1	NM	NM	0	9/17/2007	BV-10	21.1	NM	NM
12	9/17/2007	BV-9	19.2	0.2	1.1	12	9/17/2007	BV-10	19.0	0.2	2.5
24	9/18/2007	BV-9	20.1	0.2	3.5	24	9/18/2007	BV-10	19.0	0.3	0.4
36	9/18/2007	BV-9	18.7	0.2	5.9	36	9/18/2007	BV-10	17.8	0.4	1.1
48	9/19/2007	BV-9	19.4	0.3	5.6	48	9/19/2007	BV-10	17.8	0.6	1.1
60	9/19/2007	BV-9	17.3	0.5	10.0	60	9/19/2007	BV-10	16.7	0.8	11.8
72	9/20/2007	BV-9	18.9	0.3	16.8	• 72	9/20/2007	BV-10	17.1	0.7	2.2
		<b>BV-11</b>						BV-12			
Iour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)	Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)
0	9/17/2007	BV-11	21.1	NM	NM	0	9/17/2007	BV-12	21.1	NM	NM
12	9/17/2007	BV-11	18.7	0.1	4.9	12	9/17/2007	BV-12	19.2	0.1	1.9
24	9/18/2007	BV-11	18.3	0.2	2.9	24	9/18/2007	BV-12	19.7	0.2	1.4
36	9/18/2007	BV-11	17.3	0.3	3.2	36	9/18/2007	BV-12	18.7	0.2	1.9
48	9/19/2007	BV-11	17.0	0.5	2.8 -	48	9/19/2007	BV-12	19.3	0.2	1.8
60	9/19/2007	BV-11	15.7	0.7	6.2	60	9/19/2007	BV-12	16.9	0.6	4.9
72	9/20/2007	BV-11	15.8	0.9	9.6	72	9/20/2007	BV-12	18.4	0.4	1.6

River Terrace Bioventing System
2007 In Sity Respiration Test

Hour Into Testing (hr)	Date of Collection	Sample Location	O2 (%)	CO2 (%)	VOCs (ppm)	
0	9/17/2007	BV-13	21.1	NM	NM	•
12	9/17/2007	BV-13	19.2	0.1	1.3	
,24	9/18/2007	BV-13	19.0	0.1	0.7	
36	9/18/2007	BV-13	18.2	0.1	1.3	
48	9/19/2007	BV-13	18.3	1.0	0.8	
60	9/19/2007	BV-13	17.3	0.1	0.2	
72	9/20/2007	BV-13	17.3	0.1	0.7	

Notes:

hr = hour

% = percent by volume

ppm = parts per million

#### **Table 4 - Summary of Biodegredation Rates**

River Terrace Bioventing System 2007 In Situ Respiration Test Summary

	Oxygen Utilization	Oxygen Utilization	Biodegredation	
	Rate	Rate	Rate	Data Correlation
Well ID	(%/hr)	(%/day)	(mg/kg*day)	(R <sup>2</sup> )
TP-1	-0.0741	-1.778	1.20	0.7988
TP-2	-0.0859	-2.062	1.39	0.9771
TP-5	-0.2205	-5.292	3.56	0.8924
TP-6	-0.0039	-0.094	0.063	0.1311
TP-7	-0.0036	-0.086	0.058	0.0422
TP-8	-0.1191	-2.858	1.92	0.9788
TP-9	0.0079	0.190	NA	0.2596
BV-1	-0.0186	-0.446	0.300	0.7547
BV-2	-0.0466	-1.118	0.752	0.8571
BV-3	-0.0271	-0.650	0.437	0.7873
BV-4	-0.0722	-1.733	1.165	0.948
BV-5	-0.0279	-0.670	0.450	0.8413
BV-6	-0.1096	-2.630	1.768	0.9802
BV-7	-0.0187	-0.449	0.302	0.2415
BV-8	-0.0424	-1.018	0.684	0.8556
BV-9	-0.0203	-0.487	0.327	0.3479
BV-10	-0.0401	-0.962	0.647	0.9061
BV-11	-0.0561	-1.346	0.905	0.9677
BV-12	-0.0262	-0.629	0.423	0.4422
BV-13	-0.0345	-0.828	0.557	0.9486

#### Notes:

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BV = Bioventing Well

TP = Temporary Piezometer

%/hr = Percent by volume per hour

%/day = Percent by volume per day

mg = milligrams

kg = kilograms

NA = Not Available; degredation of oxygen was not measured.



**Bloomfield**, NM



# **Figure 1: Summary of Biodegradation Rates**

River Terrace Bioventing System 2007 In Situ Respiration Test Summary

## Legend

TP = Temporary Piezometer BV = Biovent Well DW = Dewatering Well

MW = Monitoring Well mg = milligramskg = kilograms d = day



←2007 In Situ Rates

N









B



**BV-5 Respiration Test Data** 









6.72









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TP-1



Page 15



TP-5



**Oxygen Utilization Rate Trend Graph** TP-6

Page 17



TP-7



Page 19


0-4T

## Summary

Construction of the River Terrace Bioventing Project was initiated in August 2005. The system was put on-line in January 2006. On-going sampling at the River Terrace area is conducted in accordance with the approved Bioventing System Monitoring Plan, dated October 28, 2006, and in accordance with an NMED comment letter dated June 13, 2007. The NMED letter revised the monitoring plan to include additional metals analysis and incorporate quarterly sampling of TP-7. These revisions were implemented during the second quarter sampling event of 2007.

#### **Data Collection**

First quarter groundwater samples were collected from each of the TP Wells (except TP-7), DW #1, and MW #49 during the week of February 26, 2007. Groundwater samples were analyzed for BTEX and MTBE (EPA Method 8021B), GRO and DRO (EPA Method 8015B). MW #49 and DW #1 were also analyzed for Total Lead, Chromium, and Mercury (EPA Method 6010C and 7470). Field measurements included temperature, pH, conductivity, DO, and ORP.

Second quarter sampling occurred during the week of June 18, 2007. TP-7 was included in this sampling regimen per the June 13, 2007 NMED letter (Direction to Modify Future Monitoring as reported in the River Terrace Voluntary Corrective Measures Bioventing System Annual Report January 2006 through December 2006 – Item #2). TP-7 was sampled after a 24 hour recharge time. In the same letter, NMED required additional metals analysis of all the TP Wells, MW #49, and DW #1 on a quarterly basis for lead and on an annual basis for chromium and barium. Annual analysis of chromium and barium (EPA Method 6010B) was conducted in the second quarter event. Lead analysis (EPA Method 6010B) was performed on all of the TP Wells, MW #49, and DW#1. DW #1 also received an analysis for mercury (EPA Method 7470). In addition, groundwater samples were analyzed for BTEX and MTBE (EPA Method 8021B), GRO and DRO (EPA Method 8015B). Field measurements included temperature, pH, conductivity, DO, and ORP.

Third quarter monitoring occurred during the week of August 20, 2007 and fourth quarter monitoring was conducted during the week of October 29, 2007. During those sampling events, all TP Wells, MW #49, and DW #1 groundwater samples were analyzed for BTEX and MTBE (EPA Method 8021B), GRO and DRO (EPA Method 8015B), and lead analysis (EPA Method 6010B). DW #1 also received an analysis for mercury (EPA Method 7470). Field measurements included temperature, pH, conductivity, DO, and ORP. TP-7 was sampled after a 24 hour recharge time.

An in situ respiration test was not performed in May 2007 due to high flow rates of the San Juan River and the inability to duplicate conditions similar to the May 2006 respiration test. The in situ respiration test was re-scheduled and performed in September 2007. The respiration rate test consisted of monitoring the rate at which oxygen is depleted and carbon dioxide is generated when the air supply is turned off. Soil gas samples were collected from each BV well (BV-1 through BW-13) and specified TP wells (TP-1, -2, -5, -6, -7, -8, and -9) at a frequency outlined in the Bioventing System Monitoring Plan Amendment. Oxygen, carbon dioxide, and VOC concentrations in soil gas were monitored in these wells over a 72-hour period.

GAC filter influent samples (GAC Inf) and effluent samples collected downstream of the lag GAC filter (GAC 2 Eff) were collected quarterly. Effluent samples from the lead GAC filter (GAC 1 Eff) were obtained weekly until breakthrough was detected. Samples were analyzed for BTEX by EPA Method 8021B, GRO and DRO by EPA Method 8015B.

#### **Analysis and Conclusions**

Since August 2005, BTEX concentrations have been detected within the following ranges at monitoring wells within the western portion of the River Terrace area (TP-1, 2, 6 and 8)

Benzene:	<0.001mg/L to	6.2 mg/L
Toluene:	<0.001 mg/L to	8.7 mg/L
Ethylbenze	ne:<0.001 mg/Lto	6.3 mg/L
Xylenes:	<0.002 mg/L to	32.0 mg/L

BTEX and total petroleum hydrocarbon concentrations in groundwater have generally decreased over time at wells within the western portion of the River Terrace. Fluxuation in groundwater concentration at wells within the western portion of the River Terrace were most likely caused by fluxuating groundwater levels due to dewatering system operations and change in river flow, thus causing a flushing effect of the smear zone in soil.

Analytical results of the groundwater monitoring continue to indicate that the contaminants of concern are primarily benzene, toluene, ethylbenzene, and xylene (BTEX) at TP #1, TP #2, TP #5, and TP #8. BTEX results at TP #6 were below WQCC Standards in 2007. BTEX results are still below WQCC Standards at TP #3, TP #7, TP #9, TP #10, TP #11, TP #12 and TP #13.

Barium and chromium have been detected in the River Terrace wells since second quarter 2007 when NMED included metals analysis for River Terrace sampling. The detected concentrations of barium and chromium have been below New Mexico water quality standards of 1.00 mg/L and 0.05 mg/L, respectively.

Lead has been detected at the River Terrace at concentrations ranging between <0.005 mg/L and 0.3 mg/L, with the highest concentration detected at TP-8 during the October 2007 sampling event. TP-8 is located on the refinery-side of the river terrace slurry wall, and therefore is unlikely to impact the San Juan River. Lead concentrations at MW-49 are non-detect, supporting the notion of containment on the refinery-side of the slurry wall.

Mercury was once detected at DW-1 during the February 2007 sampling event. Mercury was not detected in all subsequent sampling events.

Field data indicates the bioventing system is continuing to enhance bioremedial activity within the river terrace area around TP-#1, TP-#2, TP-#5, TP-#6, and TP-#8. Soil gas concentrations collected in the field indicate that the bioventing system is providing enough oxygen to sustain optimal microbial activity (e.g., vapor-phase oxygen concentrations at or above 5 percent).

Performance monitoring will continue on a quarterly basis following the guidelines from the Bioventing System Monitoring Plan and the June 13, 2007 NMED letter (Direction to Modify Future Monitoring as reported in the River Terrace Voluntary Corrective Measures Bioventing System Annual Report January 2006 through December 2006).

#### In-Situ Respiration Test

The decreasing concentration (percent by volume) of oxygen and increasing concentration of carbon dioxide over time is a common indicator of biodegradation. The soil gas concentrations detected over the 72 hour monitoring period during the 2007 monitoring event from the TP and BV wells support the continued presence of active biodegradation within the River Terrace area.

The average biodegradation rate detected at the TP wells decreased by approximately 57% between the 2006 and 2007 respiration test events, with the average biodegradation rate for 2006 and 2007 being 3.16 mg/kg-d and 1.36 mg/kg-d, respectively. Similar conclusions are supported by the average biodegradation rates detected at the BV wells; the average biodegradation rate detected during the 2006 and 2007 test events were 1.82 mg/kg-d and 0.67 mg/kg-d, respectively. The lower biodegradation rates over time are indicators of successful progress in bioremediation in the subsurface.

Since the 2006 and 2007 in situ respiration tests were conducted under similar subsurface conditions, the comparative different in the biodegradation rate is most likely the result of a decreased food source (hydrocarbon), thus resulting in low biodegradation activity.

#### **GAC Analysis**

Break through in the lead GAC was detected in April through lab analysis and V-612 was bypassed and taken out of service on April 30, 2007. V-611 became the lead GAC at that time. Refinery personnel will continue to analyze GAC 1 EFF (V-611) for BTEX, GRO, and DRO on a monthly basis. GAC INF and GAC 2 EFF (V-612) will be analyzed quarterly for BTEX, GRO, and DRO.

Section	8.0	Maps
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Title	Figure
Vicinity Map	Figure 1
Facility Site Plan	Figure 2
River Terrace Bioventing Project Plot Plan	Figure 3
Soil Vapor 3 <sup>rd</sup> QTR BTEX Concentration Map	Figure 4
Soil Vapor 4 <sup>th</sup> QTR BTEX Concentration Map	Figure 5
Groundwater 3 <sup>rd</sup> QTR BTEX Concentration Map	Figure 6
Groundwater 4 <sup>th</sup> QTR BTEX Concentration Map	Figure 7

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# **Field Methods**

### Soil Gas Sampling

#### **Sampling Procedure**

All water/product levels are determined to an accuracy of 0.01 foot using a Geotech Interface Meter. Injection pressure and injection flow rates are collected from all bioventing wells in which air is being injected. Soil gas samples are taken before groundwater purging and sampling.

Each well is equipped with an air-tight well cap for sample extraction through a sample port at the top of the well casing. Each well has dedicated flexible Teflon Food Grade tubing which extends through both sides of the sample port with one side continuing down into the well casing to approximately 1 foot above the water table. The other end (topside) protrudes from the cap and is available as a connector.

Before purging, pressure is measured by attaching a hand-held Magnahelic Pressure Gauge to the topside tubing.

A portable vacuum pump is used for purging and sample collection. The topside tubing is connected to the suction of the vacuum pump and three purge volumes are withdrawn from the well prior to sample collection. After sufficient purging, a Tedlar bag is attached to the tubing at the discharge end of the pump for sample collection. All samples are properly labeled and placed in a cooler for delivery to the off-site laboratory or for field measurements of vapor-phase organics

#### Well Purging Technique

A vacuum pump is used to remove stagnant air from the soil gas sampling assembly. Approximately three well volumes are purged from the well before sampling. Purged volumes are determined by using the following equation: Conversion Factor X Depth to Water X 28L/ft3 X Three

The conversion factor is determined by the diameter of the well casing.

Casing	Conversion Factor
6"	0.196L/ft
4"	0.0873L/ft
2"	0.0.0218L/ft
1"	0.0.005545L/ft

#### Soil Gas Sampling and Sample Handling Procedure

Equipment and supplies needed for collecting representative soil gas samples include:

- Interface Probe
- Vacuum Pump
- 1 Liter Tedlar Bags
- PID Meter
- RKI Eagle Meter
- Cooler to store Tedlar Bags



- Sharpie Permanent Marker
- Field Paperwork/Logsheet
- Trash container (plastic garbage bag)

Tedlar bags and tubing dedicated for each well are used for field measurements. New Tedlar bags are used for BTEX and GRO collection and analysis. After sufficient purging, samples are collected using the vacuum pump. Field measurements of vapor-phase organics, oxygen, and carbon dioxide concentrations are recorded using portable field instruments. BTEX and GRO samples are labeled immediately with location, date, time, analysis, and sampler and then put in a trash bag and placed in a cooler. The field logsheet is reviewed to verify all entries. Samples are then shipped to the laboratory.

To prevent cross-contamination, procedures include dedicated tubing for each of the wells sampled as well as a five minute purge time of the vacuum pump in ambient air.

#### Instrument Calibration

The RKI Eagle is a portable gas detection system with sensors for oxygen, carbon dioxide, and methane. Calibration of the instrument is conducted at the beginning of each day of sampling.

The meter is turned on and allowed to warm up. Fill the dedicated Tedlar bags with known calibration gas. One bag is used for the carbon dioxide calibration and the other bag contains the oxygen and methane calibration gasses. Press and hold the AIR/ $\blacktriangle$  button until a tone sounds. The Eagle automatically sets the toxics circuits to zero and the oxygen circuit to 20.9%.

Press and hold the SHIFT /♥ button, then press the DISP/ADJ button. The calibration menu is displayed. Use the AIR/▲ and SHIFT/♥ buttons to place the prompt next to the SINGLE CALIBRATION menu option. Press the POWER/ENTER button to display the Single Calibration menu. Use the AIR/▲ or SHIFT/♥ button to place the prompt next to the channel to calibrate. Press the POWER/ENTER button. Connect the tubing from the Tedlar bag to the Eagle's probe. If necessary, use the AIR/▲ (increase) and SHIFT/♥ (decrease) buttons to adjust the reading to match the concentration listed on the calibration cylinder. Press the POWER/ENTER button to set the span value. Repeat the steps for any other channels you want to calibrate.

The MiniRae 2000 Portable VOC Monitor (PID) is calibrated at the beginning of each day of sampling. Turn on the monitor and wait for the **Ready** message display. Press and hold both (N/-) and (MODE) keys for three seconds to enter programming mode. The first menu item "Calibrate/select Gas?" will be displayed. Press (N/-) to scroll to Fresh Air Cal? And press (Y/-) to select that menu item. Clean ambient air can be used for the "fresh air" calibration. Press (Y/-) to begin the zeroing process.

After zeroing is complete, press (N/-) to scroll to the next menu item. When **Span Cal?** is displayed press (Y/-) to select that menu item. Connect the monitor to a known calibration gas cylinder (isobutylene) after the display shows **Apply gas** 

**now!** The monitor will then perform the calibration. When calibration is completed, turn off the flow of gas, disconnect the cylinder, and exit the programming mode by pressing the **(MODE)** key once.

# **Groundwater Sampling**

#### **Groundwater Elevation**

All water/product levels are determined to an accuracy of 0.01 foot using a Geotech Interface Meter. The technician records separate phase hydrocarbon, depth to water, and total well depth using this probe.

#### Water Quality/Groundwater Sampling

Prior to purging, a YSI 550A Dissolved Oxygen Probe is used to determine dissolved oxygen (DO) levels. Water quality parameters are measured using an Ultrameter 6P by the Myron L Company. Electrical conductance, oxidation-reduction potential (ORP), pH, and temperature are monitored during purging.

#### Well Purging Technique

At least three well volumes are purged from the well. Purge volumes are determined using the following equation:

Well Depth – Casing Height – Depth to Liquid X Conversion Factor X Three. The conversion factor is determined by the diameter of the well casing.

Casing	Conversion Factor
6"	1.50 gal/ft
5"	1.02 gal/ft
4"	0.74 gal/ft
3"	0.367 gal/ft
2"	0.163 gal/ft

### Well Sampling and Sample Handling Procedure

Equipment and supplies needed for collecting representative groundwater samples include:

- Interface Probe
- Ultrameter 6P
- YSI 550A Dissolved Oxygen Instrument
- Distilled Water
- Disposable Latex Gloves
- Disposable Bailers
- String/Twine
- Cooler with Ice
- Bottle kits with Preservatives (provided by the contract laboratory)
- Glass Filters and Syringes Jar (usually 4 oz.)
- Sharpie Permanent Marker
- Field Paperwork/Log sheet
- Two 5-gallon buckets



- Trash container (plastic garbage bag)
- Ziploc Bags
- Paper towels

Typically disposable bailers are used for purging and sampling. Each bailer holds one liter of liquid. Three well volumes can be calculated by counting the number of times a well is bailed.

All purged water is poured into a 55-gallon drum designated for sampling events.

After sufficient purging, samples are collected with the bailer and poured into the appropriate sample containers. Two people are usually utilized for sampling. Sampling takes place over a bucket to insure that spills are contained

Samples are labeled immediately with location, date, time, analysis, preservative, and sampler. Then they are put in a Ziploc bag and placed in a cooler holding sufficient ice to keep them cool. The field log sheet is reviewed to verify all entries.

#### Purge and Decontamination Water Disposal

The Ultrameter 6P, YSI 550A DO Probe, and the interface probe are rinsed with distilled water after every well. The rinse procedure takes place over a bucket to insure that spills are contained.

All rinse and purge water is contained and then disposed of through the refinery wastewater system.

#### **Instrument Calibration**

Calibration of the YSI 550A Dissolved Oxygen Instrument occurs at the beginning of each day of sampling. The probe is powered on and allowed to stabilize, which usually takes 15 minutes. Enter the calibration menu. The LCD will prompt you to enter the local altitude in hundreds of feet. When the proper altitude appears on the LCD, press the **ENTER** key.

The LCD will then prompt you to enter the salinity of the water you are about to analyze. After entering the correct salinity, the instrument will return to normal operation.

The Ultrameter 6P instrument calibration occurs at the beginning of each day of sampling. For Conductivity and TDS calibration, the cell is rinsed three times with a 3000 umhos/cm NaCl Standard. The cell cup is refilled with the standard. Either the **COND** or the **TDS** button is pressed and then the **CAL** button is pushed. Press the up or down arrow until the display agrees with the standard. The **CAL** button is pressed to accept the value.

The Ultrameter 6P has an electronic ORP calibration which is automatically calibrated with the 7 pH. The pH sensor well is rinsed three times with 7.0 buffer solution and then refilled again with that buffer. The **pH** button is pressed then the **CAL** button. The up or down arrow is adjusted until the display agrees with

the buffer value. The **CAL** button is pushed to accept that value. Repeat the calibration steps using an acid buffer solution and then again with a base buffer solution.

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# Hall Environmental Analysis Laboratory

# QUALITY ASSURANCE PLAN

# Effective Date: May 2007

# **Revision 8.3**

www.hallenvironmental.com

Control Number: 0000069

Approved By:

Approved By:

Nancy McDuffie Date Laboratory Manager/QA Officer Andy Freeman Date Business Manager

1



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Table of Contents					
Section	Title				
1.0	Title Page				
2.0	Table of Contents				
3.0	Introduction Purpose of Document Objectives Policies				
4.0	Organization and Responsibility Company Personnel and Responsibilities Laboratory Director Laboratory Manager Business/Project Manager Quality Assurance Officer Section Managers/technical directors Chemist Lab Technician Sample Control Manager Delegation of absence employees Personnel Qualifications and Training Organizational Structure				
5.0	Receipt and Handling of Samples Sampling Procedures Containers Preservation Holding Times Sample Custody Chain-of-Custody Form Receiving Samples Logging in Samples and Storage Disposal of Samples				
6.0	Analytical Procedures List of Procedures Used				



7.0	Calibration Instrument Calibration	22	
	Standards Procedures Reagents Analytical Balance pH Meter Thermometers Refrigerators Ovens Analytical Instrumentation		
٥ <b>٨</b>	Other Analytical Instrumentation and Equipment	0.4	
0.0	Maintenance	24	
9.0	Quality Control Internal Quality Control Checks Precision, Accuracy, Detection Limit Quality Control Parameter Calculations Mean Standard Deviation Percent Recovery (%R)	25	
	Confidence Intervals Relative Percent Difference (RPD) Uncertainty Measurements Calibration Calculations		
			·
. 10.0	Data Reduction, Validation, and Reporting Data Reduction Validation Reports and Records	32	
11.0	Corrective Action	34	
12.0	Quality Assurance Audits and Reports Internal/External Systems' Audits and Internal and External Reports	35	
13.0	Analytical Protocols	37	
Appendi	ix A		

Current laboratory licenses and list of licensed parameters 

#### 3.0 Introduction

#### Purpose of Document

The purpose of this Quality Assurance Manual is to formally document the quality assurance policies and procedures of Hall Environmental Analysis Laboratory, Inc. (HEAL), for the benefit of its employees, clients, and accrediting organizations. This laboratory continually implements the aspects of this plan as an essential and integral part of laboratory operations in order to assure that high quality data is produced in an efficient cost effective manner.

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#### Objectives

The objective of HEAL is to achieve and maintain excellence in environmental testing. This is accomplished by developing, incorporating and documenting the procedures and policies specified in this manual. A laboratory staff that is analytically competent, well qualified, and highly trained carries out these activities. An experienced management team, knowledgeable in their area of expertise, monitors them. Finally, a comprehensive Quality Assurance program governs laboratory practices and assures that the analytical results are valid and defensible.

HEAL establishes and thoroughly documents its activities to ensure that all data generated and processed will be scientifically valid and of known and documented quality. Routine laboratory activities are detailed in method specific. All data reported meets the applicable requirements for NELAC, EPA and/or State Bureaus. For specific method requirements refer to Standard Operating Procedures (SOP's), EPA methods, Standard Methods 20<sup>th</sup> edition or state specific methods.

The management assures that this documentation is correct in terms of required accuracy, data reproducibility, and that the procedures contain proper Quality Control measures. The management additionally assures that all equipment is reliable, well maintained and calibrated. The procedures and practices of the laboratory are able to conform to client specifications and regulatory requirements. Meticulous records are maintained for all samples and their respective analyses so that results are well documented and defensible in a court of law.

The HEAL QA Officer is responsible for supervising and administering this quality assurance program, insuring each individual is responsible for its proper implementation. All HEAL management remains committed to the encouragement of excellence in analytical testing and will continue to provide the necessary resources and environment conducive to its achievement.

#### Policies

Understanding that quality cannot be mandated, it is the policy of this laboratory to provide an environment that encourages all staff members to take pride in the quality of their work. In addition to furnishing proper equipment and supplies, HEAL stresses the importance of continued training and professional development. Further, HEAL recognizes the time required

for data interpretation. Therefore, no analyst feels pressure to sacrifice data quality for data quantity. Each staff member must perform with the highest level of integrity and professional competence, always being alert to problems that could compromise the quality of technical work.

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Management and senior personnel supervise analysis closely in all operations. Under no circumstance is the willful act or fraudulent manipulation of analytical data condoned. Such acts must be reported immediately to the management. Reported acts will be assessed on an individual basis and resulting actions could result in dismissal. The laboratory slaff is encouraged to speak with lab managers or senior management if they feel that there are any commercial, financial, or other undo pressures, which might adversely affect the quality of their work.

All client information at HEAL is considered confidential. No information will be given out without the express verbal or written permission of the client. All reports generated will be held in the strictest of confidence.

This is a controlled document. Each copy is assigned a unique tracking number and when released to a client or accrediting agency the QA Officer keeps the tracking number on file.

#### 4.0 Organization and Responsibility

#### Company

HEAL is accredited in accordance with NELAC standards (see NELAC accredited analysis list) and by the Arizona Department of Health Services. Additionally, HEAL is qualified as defined under the Petroleum Storage Tank Regulations of the State of New Mexico Environmental Improvement Board (USTR §1201), the State of New Mexico Water Quality Control Commission regulations and the New Mexico State Drinking Water Bureau. It is a locally owned small business that was established in 1991. HEAL is a full service Environmental Analysis Laboratory with analytical capabilities that include both organic and inorganic methodologies and has performed analyses of soil, water and air samples for many sites in the region. HEAL's client base includes local, state and federal governmental agencies, private of New Mexico and to the New Mexico Department of Transportation. HEAL has been acclaimed by its customers as producing quality results and as being adaptive to client-specific needs.

The laboratory is divided into a volatile organic section, a semi-volatile organic section, and an inorganic section. Each section has a designated manager/technical director. The section managers report directly to the laboratory manager, who oversees all operations.

#### Certifications

National Environmental Laboratory Accreditation Program (NELAP) – Oregon Primary accrediting authority.

Arizona Department of Health Services

See appendix A for copies of current licenses and licensed parameters.

#### Personnel

All employees training certificates and diplomas are kept on file with demonstrations of capability for each method they perform. An Organizational Chart can be found on page 11.

#### Laboratory Director

The Laboratory Director is responsible for overall technical direction and business leadership of Hall Environmental Analysis Laboratory, Inc. The Laboratory Manager and the Business Manager report directly to the Laboratory Director. Someone with a minimum of 7 years of directly related experience and a BS in a scientific or engineering discipline should fill this position.

#### Laboratory Manager/Technical Director

The Laboratory Manager is responsible for the daily operations of the laboratory. The Laboratory Manager is the technical director of the laboratory and in conjunction with the technical directors of the sections, is responsible for coordinating activities within the laboratory with the overall goal of efficiently producing high quality data in a reasonable time.

In events where employee scheduling or current workload is such that new work cannot be incorporated with missing holdtimes, the Laboratory Manager has authority to modify employee scheduling or re-schedule projects.

Additionally, the laboratory manager reviews and approves new analytical procedures and methods, and performs a technical review of most analytical results. The Laboratory Manager provides technical support to customers and staff.

The Lab Manager also observes the performance of supervisors to ensure good laboratory practices and proper techniques are being taught and utilized, assisting in overall quality control implementation, and strategic planning for the future of the company. Other duties include assisting in establishing laboratory policies which lead to the fulfillment of requirements for various certification programs, assuring that all Quality Assurance and Quality Control documents are reviewed and approved, and assisting in conducting Quality Assurance Audits.

The lab manager addresses questions or complaints that cannot be answered by the section managers. Someone with a minimum of 7 years of directly related experience and a BS in a scientific or engineering discipline should fill this position.

#### Business/ Project Manager

The role of the business/project manager is to act as a liaison between the client and the laboratory. The business project manager reviews reports, updates clients on the status of projects in-house, prepares quotations for new work, and is responsible for the marketing effort.

All new work is assessed by the project manager and reviewed with the other managers so as the not exceed the laboratories capacity. In events where employee scheduling or current workload is such that new work cannot be incorporated with missing holdtimes, the Business Manager has authority to re-schedule projects.

It is also the duty of the project manager to work with government agencies and other clients to make certain that the laboratory is compliant on specific work plan requirements.

Additionally, the Business Manager can initiate the review of the need for new analytical procedures and methods, and performs a technical review of some analytical results. The Business Manager provides technical support to customers. Someone with a minimum of

7 years of directly related experience and a BS in a scientific or engineering discipline should fill this position.

#### Quality Assurance Officer

The Quality Assurance Officer (QAO) is responsible for developing and carrying out the approved Quality Assurance Program, and advising and assisting management in meeting these requirements. The QAO monitors quality control activities of the laboratory in order to determine conformance with the Quality Assurance Program, performing Quality Assurance Audits, writing reports, providing follow-up action, and issuing Observation and Corrective Action Reports as needed.

Additional responsibilities include cataloged documentation of the following: Staff Training and Demonstration Of Capability (DOC) records, Instrument Detection Limits (IDL), Method Detection Limits (MDL), and Instrument/Equipment Certification and/or Maintenance records.

Complaints from clients are logged on a complaint form, which is reviewed by the QAO to ensure that it is handled according to the Quality Systems Section 5.5.3.1 and kept on file. When procedures are not in compliance with the requirements of this plan, "stop work orders" can be issued.

Finally, the QAO provides clients with Quality Control data and Quality Assurance reports as requested. Someone with a minimum of 3 years of directly related experience and a BS in a scientific or engineering discipline should fill this position or it can be filled by a senior manager.

#### Section Manager/Technical Directors

The Section Manager/Technical Directors are responsible for training and supervising departmental staff. They schedule incoming work and monitor laboratory personnel to ensure that proper procedures and techniques are being used. They supervise and implement new Quality Control procedures as directed by the QAO, update and maintain quality control records and evaluate laboratory personnel in their Quality Control activities.

They are the technical director of the associated section and review analytical data to acknowledge that data meets all criteria set forth for good Quality Assurance practices. Someone with a minimum of 3 years of directly related experience and a BS in a scientific or engineering discipline should fill this position.

#### Chemist I, II and III.

A Chemist is responsible for the analysis of soil and water samples and the generation of high quality data in accordance with the laboratory SOPs and QA/QC guidelines in a reasonable time as prescribed by standard turnaround schedules or as directed by the Section Manager, Laboratory Manager or Business Manager.

The chemist is responsible for making sure all data generated is entered in the database in the correct manner and the raw data is reviewed, signed and delivered to the appropriate peer for review. A Chemist reports daily to the section manager and will inform them as to material needs of the section specifically pertaining to the analyses preformed by the chemist. Additional duties may include preparation of samples for analysis, maintenance of lab instruments or equipment, cleaning and providing technical assistance to lower level laboratory staff.

The senior chemist in the section may be asked to perform supervisory duties as related to operational aspects of the section. The chemist may perform all duties of a lab technician.

The position of Chemist is a full or part time hourly position and may divided into three levels, Chemist I, II, and III. Chemist I must have a minimum of an AA in a related field or equivalent experience. Chemist II must have a minimum of an AA in a related field or equivalent plus, at least 2 years of environmental or closely related lab experience. Chemist III must have Bachelors degree and 3 years of environmental or closely related lab experience. It is experience.

#### Lab Technician

A lab technician is responsible for providing support in the form of sample preparation, sample analysis, general lab maintenance, glassware washing, chemical inventories and sample kit preparation.

#### Sample Control Manager

The sample control manager is responsible for receiving samples and reviewing the sample login information after it has been entered into the computer. The sample control manager also checks the samples against the chain-of-custody for any sample and/or labeling discrepancies prior to distribution.

The sample control manager is also responsible for sending out samples to the subcontractors along with the review and shipping of field sampling bottle kits. The sample control manager acts as a liaison between the laboratory and field sampling crew to assure the appropriate analytical tests is assigned. If a discrepancy is noted the sample Control Manager or sample custodian will contact the customer to resolve any questions or problems. The Sample Control Manager is an integral part the customer service team.

This position should be filled by someone with a high school diploma and a minimum of 3 years of directly related experience and can also be filled by a senior manager.

#### Delegations in the Absence of Key Personnel

Planned absences shall be preceded by notification to the Laboratory Manager. The appropriate staff members shall be informed of the absence. In the case of unplanned absences, the organizational superior shall either assume the responsibilities and dulies or delegate the responsibilities and duties to an appropriately qualified member.

#### Laboratory Personnel Qualification and Training

All personnel joining HEAL shall undergo orientation and training. During this period the new personnel shall be introduced to the organization and their responsibilities, as well as the policies and procedures of the company. They shall also undergo on the job training and shall work with trained staff. They will be shown required tasks and be observed while performing them. Initial demonstration of capability must be completed and documented prior to performing assignments unsupervised.

New employees that do not have prior analysis experience will not be allowed to perform analysis until they have demonstrated attention to detail with minimal errors in the assigned tasks. To ensure a sustained level of quality performance among staff members, continuing demonstration of capability shall be performed at least once a year.

Laboratory staff must successfully pass an external Proficiency Testing (PT) sample or initial PT sample. Each new employee shall sign an ethics and data integrity agreement to ensure that they know that data quality is our main objective. Every HEAL employee recognizes that although turn around time is important, quality is put above any pressure to complete the task expediently. Analysts are not compensated for passing QC parameters nor are incentives given for the quantity of work produced.

Sample Custodian Amanda Smolinski Sample Custodian Tanya Shomin Sample Manager Anne Thorne Brian Livengood GCMS Chemist III Semi-Volatile Manager Steve Crandell GC Chemist II Julie Tuccillo GC Chemist II John Potter GC Manager Laboratory Director Nick Bliss Volatile Scott Hallenbeck Laboratory Manager/QC Officer Nancy McDuffie Lisa Medukas GCMS Chemist I Sandy Paolicchi GCMS Chemist I **GCMS Manager** Derek Harmon Business/Project Manager Andy Freeman Vickie Brown Bookkeeper Carolyn Swanson TOC/ Mercury Chemist III Thomas, Francish Inorganic Chemist I Inorganic Chemist I Nicole Oglethorpe ICP Chemist III Kevin Sangster Inorganic Manager **Fiffany Shaw** lan Cameron

Inorganic Chemist I

**Diagram of Organizational Structure** 

#### 5.0 Receipt and Handling of Samples

#### Sampling

#### Procedures.

HEAL does not provide field sampling for any projects. Sample kits are prepared and provided for clients upon request. The sample kits contain the appropriate sampling containers (with a preservative when necessary), labels, blue ice, a cooler, chain-of-custody forms, plastic bags, bubble wrap, and any special sampling instructions. The sample control manager reviews the kits prior to shipment.

#### Containers

Containers which are sent out for sampling are purchased by HEAL from a commercial source. Glass containers are certified "EPA Cleaned" QA level 1. Those containers are received with a Certificate of Analysis verifying that the containers have been cleaned according to the EPA wash procedure. Containers are generally used once and discarded. If the samples are collected and stored in inappropriate containers the laboratory may not be able to accurately quantify the amount the desired components. In this case re-sampling may be required.

#### Preservation

If sampling for an analyte(s) requires preservation, the sample custodians fortify the containers prior to shipment to the field. The required preservative is introduced into the vials in uniform amounts and done so rapidly to minimize the risk of contamination. Vials that contain a preservative are labeled appropriately.

The following pages contain tables specifying additional preservation requirements for samples.

# Tables of Standard Holding Times, Preservation, and Containers

### Organic Compounds

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Purgeable halocarbons and aromatics	aqueous	40 mL glass voas, teflon- lined septum	HgCl <sub>2</sub> , or HCl, pH <2; cool, <6° C	14 days to analysis
Purgeable halocarbons and aromatics	Soil/MeOH*	4 oz. Jar/2- 20 ml VOAs w/ methanol	cool, <6° C	14 days to analysis
Semi-volatiles	aqueous	1 L amber	cool, <6° C	7 days to extract, 40 days after extraction to analyze
Semi-volatiles	soil	8 oz. Jar	cool, <6° C	14 days to extract, 40 days after extraction to analyze
PCBs, pesticides, herbicides	aqueous	1 L amber	cool, <6° C	7 days to extract, 40 days after extraction to analyze
PCBs, pesticides, herbicides	soil	8 oz. Jar	cool, <6º C	14 days to extract, 40 days after extraction to analyze

\*Use of field methano! kits are available and recommended for the PSTB.

### Inorganic Compounds

		Contenna		
Acidity	aqueous	250-mL HDP	cool, <6° C	14 days
Alkalinity	aqueous	250-mL HDP	cool, <6° C	14 days
Ammonia	aqueous	1-L HDP	cool, ≤6° C, H₂SO₄  pH<2	28 days
Biochemical Oxygen Demand	aqueous	2-L HDP	cool, <6° C	48 hours
Bromide	aqueous	250-mL HDP	none required	28 days
Chemical Oxygen Demand	aqueous	125-mL HDP	cool, <6° C, H₂SO₄ pH<2	28 days
Chloride	aqueous	125-mL HDP	none required	28 days
Chioride	solid	4-oz jar	none required	28 days
Chlorine, total residual	aqueous	500-mL HDP	none required	analyze immediately
Chromium VI	aqueous	250-mL HDP	cool, <6° C	24 hours
Chromium VI	solid	8-oz jar	cool, <6º C	as soon as possible

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Color	aqueous	125-mL HDP	cool, <6° C	48 hours
Cýanide	aqueous	1-L HDP	cool, <6° C	14 days
· ·	•		NaOH pH>12	-
Cyanide	solid	4-oz jar	cool, <6° C	14 days
Fluoride	aqueous	500-mL HDP	none required	28 days
Hardness	aqueous	250-mL HDP	HNO <sub>3</sub> or	6 months
			H <sub>2</sub> SO <sub>4</sub> pH<2	:
Hydrogen ion (pH)	aqueous	60-mL HDP	none required	analyze immediately
Hydrogen ion (pH)	solid	4-oz jar	none required	analyze immediately
Kjeldahl and organic	aqueous	1-L HDP	cool, <6° C,	28 days
nitrogen		· · ·	H₂SO₄ pH<2	
Mercury	aqueous	250-mL HDP	$HNO_3 pH < 2$	28 days
Mercury	solid	8-oz jar	none required	28 days
Metals (except Cr Vi	aqueous	500-mL HDP	HNO <sub>3</sub>	6 months
and Hg)	;		pH < 2	
Nitrate	aqueous	250-mL HDP	cool, <6° C	48 hours
Nitrate	solid	8-oz jar	cool, <6° C	analyze immediately
Nitrate-Nitrite	aqueous	250-mL HDP	cool, <6° C,	28 days
·	· · · · ·		$H_2SO_4$ pH<2	
Nitrate-Nitrite	solid	8-oz jar	cool, <6° C	28 days
Nitrite	aqueous	125-mL HDP	cool, <6° C	48 hours
Oil and Grease	aqueous	2-L wide-	cool, <6° C,	28 days
·	1. 1	mouth glass	H <sub>2</sub> SO <sub>4</sub> pH<2	<u> </u>
Oil and Grease	solid	2-L WIde-	: cooi, <6° C	28 days
Organia Carban				2P daug
Organic Carbon	aqueous		$\Box$ COOL, $\leq 0^{\circ}$ C, $\Box$	20 uays
			nH<2	
Organic Carbon	solid	4-oz iar	cool <6° C	28 days
Orthophosphate	aqueous	125-ml HDP		48 hours
Phenolics	aqueous	1-L Boston	cool <6° C	28 days
, nononolo	uquooud	Round	$H_2SO_4$ pH<2	
Phenolics	solid	8-oz iar	cool. <6° C	28 days
	· · ·	(glass only)		
Phosphorous	aqueous	1-L Boston	cool, <6° C	48 hours
(elemental)		Round		
Phosphorous (total)	aqueous	125-mL HDP	cool, <6° C,	28 days
•			H <sub>2</sub> SO <sub>4</sub> pH<2	
Residue, total	aqueous	250-mL HDP	cool, <6° C	7 days
Residue,	aqueous	250-mL HDP	cool, <6° C	7 days
filterable(TDS)		•	· · · · · · · · · · · · · · · · · · ·	
Residue, non-	aqueous	250-mL HDP	cool, <6° C	7 days
filterable (TSS)				
Residue, settleable	aqueous	Imhoff Cone	cool, <6° C	48 nours

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Residue, volatile

aqueous

250-mL HDP cool, <6° C

7 days

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Silica	aqueous	125-mL HDP	cool, <6° C	28 days
Specific	aqueous	250-mL HDP	cool. <6° C	28 days
conductance				
Specific	solid	8-oz jar	cool, <6° C	28 days
conductance				-
Sulfate	aqueous	125-mL HDP	cool, <6° C	28 days
Sulfate	solid	4-oz jar	cool. <6° C	28 davs
Sulfide	aqueous	1-L HDP	cool <6° C.	7 davs
	·		ZnAc +	· · · · · · · · ·
			NaOH pH>9	
Sulfide	solid	8-oz jar	coo!, <6° C	7 days
Surfactants	aqueous	500-mL HDP	cool, <6° C	48 hours
Turbidity	aqueous	250-mL HDP	cool. <6° C	48 hours
		· · · · ·	•	internet in the second s
#### Sample Custody

#### Chain-of-Custody Form

A Chain-of-Custody (CoC) form is used to provide a record of sample chronology starting with the field sampling through laboratory analysis. HEALs CoC contains the client's name, address, phone and fax numbers, the project name and number, the project manager's name, and the field sampler's name. It also identifies the date and time of sample collection, sample matrix, field sample ID number, number/volume of sample containers, sample temperature upon receipt, and any sample preservative information.

There is also a space to record the HEAL ID number assigned to samples after they are received. Next to the sample information is a space for the client to indicate the desired analyses to be performed. Finally, there is a section to track the actual custody of the samples. The custody section contains lines for signatures, dates and times when samples are relinquished and received. The CoC form also includes a space to record special sample related instructions, sampling anomalies, time constraints, and any sample disposal considerations.

A sample chain-of-custody form can be found at the end of this section.

#### **Receiving Samples**

Samples are received by authorized HEAL personnel. Upon arrival, the CoC is compared to the respective samples. After the samples and CoC have been determined to be complete and accurate, the sampler signs over the CoC. The HEAL staff member in turn signs the chain-of-custody, also noting the current date and time. This relinquishes custody of the samples from the sampler and delegates sample custody to HEAL. The third (pink) copy of the CoC form is given to the person who has relinquished custody of the samples.

#### Logging in Samples and Storage

Standard Operating Procedures have been established for the receiving and tracking of all samples (refer to HALL Login SOP). These procedures ensure that samples are received and properly logged into the laboratory, and that all associated documentation, including chain of custody forms, are complete and consistent with the samples received. Each sample set is given a unique HEAL tracking ID number. Individual sample locations within a defined sample set are given a unique sample ID suffix-number. Labels with the HEAL numbers, and analytes requested, are generated and placed on their respective containers. The pH of preserved samples is checked and noted if out of compliance. Samples are reviewed by the sample control manager prior to being distributed to the storage refrigerators or appropriate laboratory personnel.

Samples are stored in the volatile section refrigerator, the semi-volatile section refrigerator, or the inorganic section refrigerator. If a soil sample must be extracted for both volatile and semi-volatile analysis, it is first placed into the volatile soil sample refrigerator. After the volatile extraction, the sample is moved to the semi-volatile refrigerator to minimize any risk of contamination.

Each project (sample set) is entered into the Laboratory Information Management System (LIMS) with a unique ID given to every container. The ID tag includes the Lab ID, Client ID, date and time of collection, and the analysis/analyses to be performed. The LIMS continually updates throughout the lab. Therefore, at any time, an analysi or manager may inquire about a project and/or samples status. For more information about the login procedures, reference the Sample Login SOP.

#### **Disposal of Samples**

Analytical results are used to characterize their respective sample contamination level(s) so that the proper disposal can be performed. These wastes will be disposed of according to their hazard as well as their type and level of contamination. Refer to the Hall Environmental Analysis Laboratory Chemical Hygiene Plan for details regarding waste disposal.

Waste drums are provided by an outside agency. These drums are removed by the outside agency and disposed of in a proper manner.

The wastes that are determined to be non-hazardous are disposed of as non-hazardous waste.

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#### 6.0 Analytical Procedures

All analytical methods used at HEAL incorporate necessary and sufficient Quality Assurance and Quality Control practices. A Standard Operating Procedure is used for each method to provide the necessary criteria to yield acceptable results. These procedures are updated each year or more often if necessary and are attached as a pdf file in the Laboraiory Information Management System (LIMS) for easy access by each analyst. The sample is almost always consumed or altered during the analytical process. Therefore, it is important that each step in the analytical process be correctly followed in order to yield valid data.

When unforeseen problems arise, the analyst, section manager, and lab manager meet to discuss the factors involved. The analytical requirements are evaluated and a suitable corrective action, or resolution is established. The client is notified in the case narrative with the final report or before if validity is in question.

#### List of Procedures Used

Typically, the procedures used by HEAL are EPA approved methodologies. However, proprietary methods for client specific samples, are sometimes used. The following tables list EPA Method numbers with their corresponding analytes and/or instrument classification.

#### **Organic Analysis**

Malianelein	allite of Method
8021B	"Halogenated and Aromatic Volatile Organics by Gas Chromatography"
8015B	"Nonhalogenated Volatile Organics by Gas Chromatography"
	(Gasoline Range and Diesel Range Organics)
8081A	"Organochlorine Pesticides by Gas Chromatography"
8082	"PCBs as Aroclors by Gas Chromatography"
8151A	"Chlorinated Herbicides by GC using Methylation or Pentafluorobenzylation
	Derivitization"
8310	"Polynuclear Aromatic Hydrocarbons"
8330	"Nitroaromatics and Nitramines"
8315	"Formaldehyde"
1005	"TNRCC – Total Petroleum Hydrocarbons"
504.1	"EDB" & "DBCP"
418.1	"Total Petroleum Hydrocarbons"
413.2	"Oil and Grease"

#### Gas Chromatographic/Mass Spectrometric Methods

HN - 12 18 18 18 18 18 18 18 17	Tuillancol Meltineck
8260B	"Volatile Organic Compounds by GC/MS: Capillary Column Technique"
8270C	"Semivolatile Organic Compounds by GC/MS: Capillary Column Technique"
624	"Purgeables"
625	"Base/Neutrals and Acids"

# Inorganic Analysis

31/12110101010101017	TILLE OF MELLINE	
310.1	Alkalinity	
350.3	Ammonia	
300.0/300.1	Anions (aqueous)	
9065	Anion (soil)	
120.1	Electrical Conductivity	
3500	Ferrous Iron	
351.2	Total Kjeldhal Nitrogen (TKN)	:
9095	Paint Filter	
150.1	рН	· · ·
420.3	Phenols	·
160.1	Total Dissolved Solids (TDS)	
160.2	Total Suspended Solids (TSS)	
180.1	Turbidity	-
	Metals	· · · · · · · · · · · · · · · · · · ·
200.7/6010B	ICP Metals	· · · · · · · · · · · · · · · · · · ·
7470	Mercury (aqueous)	· · · · · · · · · · · · · · · · · · ·
7471	Mercury (soil)	

# Preparative Methodologies

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1311	Toxicity Characteristic Leaching Procedure	<u> </u>
1312	Synthetic Precipitation Leaching Procedure	
3005	Acid Digestion of Waters for Total Recoverable or Dissolved Metals	• • • • •
3010	Acid Digestion of Aqueous Samples and Extracts for Total Metals	
3050	Acid Digestion of Sediment, Sludge, and Soil samples	•
3510B	Separatory Funnel Liquid-Liquid Extraction	
3540	Soxhlet Extraction	
3545	Accelerated Solvent Extraction	
3665	Sulfuric Acid/Permanganate Cleanup (PCB)	
5030	Purge-and-Trap for Aqueous Samples	
5035	Closed-System Purge-and-Trap and Extraction for Volatile Organics in Section 2012	oil
	and Waste Samples	

Analytical Standard Operating Procedures (SOPs) are based upon the above listed methods and a variety of other publications. A log of all current SOPs is on file with the QAO and detailed SOPs are available at request.

## 7.0 Calibration

All equipment and instrumentation used at HEAL are operated, maintained and calibrated according to manufacturers guidelines, as well as criteria set forth in applicable analytical methodology. Personnel who have been properly trained in there procedures perform operation and calibration. Brief descriptions of the calibration processes for our major laboratory equipment and instruments are found below.

#### Thermometers

The thermometers in the laboratory are used to measure the temperatures of the refrigerators/freezers, ovens, water baths, TCLP Extractions, digestion blocks and samples at the time of log-in. All of these are checked for annually with a NIST certified thermometer and a correction factor is noted on each thermometer log.

#### Refrigerators/Freezers

Each laboratory refrigerator or freezer contains a thermometer capable of measuring to a minimum precision of 1°C. The thermometers are kept with the bulb immersed in liquid. Each workday, the temperatures of the refrigerators are recorded in a designated logbook to insure that the refrigerators are between  $\pm$  2° C. Samples are stored separately from the standards to reduce the risk of contamination.

#### Ovens

The oven contains a thermometer graduated by 1° C. the temperature is measured before and after a cycle when the operating procedure demands this level of precision. Otherwise they are checked daily.

#### Instrument Calibration

An instrument calibration is the relationship between the known concentrations of a set of calibration standards introduced into an analytical instrument and the measured response they produce. Calibration curve standards are a prepared series of aliquots at various known concentrations levels from a primary source reference standard. Specific mathematical types of calibration techniques are outlined in SW-846 8000B. The entire initial calibration must be performed prior to sample analyses.

The lowest standard in the calibration curve must be at or below the required reporting limit.

A minimum of 5 calibration points must be used for the calibration curve for GC, GC/MS and HPLC methods.

Most compounds tend to be linear and a linear approach should be favored when linearity is suggested by the calibration data. Non-linear calibration should be considered only when a linear approach cannot be applied. It is not acceptable to use an alternate calibration procedure when a compound fails to perform in the usual manner. When this occurs it is indicative of instrument issues or operator error.

If a non-linear calibration curve fit is employed, a minimum of six calibration levels must be used for second-order (quadratic) curves and a third order polynomial requires a minimum of seven calibration levels.

When more than 5 levels of standards are analyzed in anticipation of using second- or thirdorder calibration curves, all calibration points MUST be used regardless of the calibration option employed. The highest or lowest calibration point may be excluded for the purpose of narrowing the calibration range, and meeting the requirements for a specific calibration option. Otherwise, unjustified exclusion of calibration data is expressly forbidden.

Analytical methods vary in QC acceptance criteria. HEAL follows the method specific guidelines for QC acceptance. The specific acceptance criteria are outlined in the analytical methods and its corresponding SOP.

#### Analytical balance

All of the analytical balances are capable of weighing to a minimum precision of 0.1 grams. Records are kept of daily calibration checks for the balances in use. Certified weights are used in these checks. The balances are annually certified by an outside source and the certifications are on file with the QAO.

#### pH Meter

The pH meter measures to a precision of 0.01 pH units. The log book contains the calibration before each use, or each day, if used more than once per day. It is calibrated using 3 certified buffers. Also available with the pH meter is a magnetic stirrer with a temperature sensor.

### Other Analytical Instrumentation and Equipment

The conductivity probe constant shall be determined prior to use. A 3 point linear curve is used.

Eppendorf (or equivalent brands) pipettes are calibrated gravimetrically once a week and verified prior to use.

#### Reagents

HEAL assures that the reagents used are of acceptable quality for their intended purpose. This is accomplished by ordering high quality reagents and adhering to good laboratory practices so as to minimize contamination or chemical degradation. All reagents must meet any specifications noted in the analytical method.

Upon receipt, all reagents are assigned a separate ID number, and logged into the LIMS. All reagents shall be labeled with the date received into the laboratory and again with the date opened for use. Recommended shelf life shall be documented and controlled. Dilutions or solutions prepared shall be clearly labeled, dated, and signed. These solutions are traceable back to their primary reagents.

All gases used with an instrument shall meet specifications of the manufacturer. Recommended shelf life shall be documented and controlled. All safety requirements that relate to maximum and/or minimum allowed pressure, fitting types, and leak test frequency, shall be followed. When a new tank of gas is delivered, it shall be checked for leaks and marked with the date put in use. The date and initial pressure of a new tank will be noted on the new tank.

HEAL has a Quality Assurance Procedure designed to assure that the quality of laboratory reagent water meets established criteria for all analytical methods. HEAL continuously monitors the quality of the reagent water and provides the necessary indicators for maintenance of the purification systems.

Reagent blank samples are also analyzed to ensure that no contamination is present at detectable levels. The frequency of reagent blank analysis is the same as calibration verification samples. The reagent blank and calibration verification should be analyzed successively. Refrigerator storage blanks are stored in the volatiles refrigerator for a period of one week and analyzed and replaced once a week.

#### 8.0 Maintenance

Maintenance logs are kept for each major instrument. In the front of the log, the following information is included:

Unique name of the item or equipment Manufacturer Type of Instrument Model Number Serial Number Date received and date placed into service Location of Instrument Condition of instrument upon receipt

For routine maintenance, the following information shall be included in the log:

Maintenance Date Maintenance Description Maintenance Performed by Initials

A manufacturer service agreement (or equivalent) covers most major instrumentation to assure prompt and reliable response to maintenance needs beyond HEAL instrument operator capabilities.

#### 9.0 Quality Control

#### Internal Quality Control Checks

Hall Environmental Analysis Laboratory, Inc. utilizes various internal quality control checks, including replicates, spiked samples, blanks, laboratory control spikes, calibration standards, quality control charts, uncertainty measurements and surrogates.

Replicates, or duplicates, are identical tests repeated for the same sample in order to determine the precision of such a method. A Relative Percent Difference (RPD) is calculated as a measure of this precision.

Spiked Samples (MS/MSD) are samples evaluated with a known added quantity of a target compound. This is to help determine the accuracy of the analyses. A percent recovery is calculated to assess the quality of the accuracy.

Duplicate samples, laboratory control spikes (LCS) and spiked samples (MS/MSD) are performed according to the following schedule for each area:

**Organics**: LCS and MS/MSD samples are analyzed for every batch of 20 samples (sufficient sample volume permitting for the MS/MSD).

Metals and wet chemistry: LCS, MS/MSD and sample duplicate analysis are performed, at a minimum, for every batch of 20 samples (sufficient sample volume permitting for the MS/MSD and sample duplicate).

Anions: LCS, MS/MSD and sample duplicate analysis are performed, at a minimum, for every batch of 10 samples (sufficient sample volume permitting for the MS and sample duplicate).

Blanks consist of all the reagents measured and treated as they are with samples, except without the samples. This enables the laboratory to assure clean reagents and procedures.

Blind Quality Control Samples are samples provided by an unbiased third party. They contain a pre-determined concentration of the target compound, which is unknown to the analyst. They are analyzed quarterly, and enable the laboratory to assess the quality of its results.

Calibration standards are standards run to calibrate and confirm the consistency of the instrumentation. Calibration standards are utilized at the beginning and end of each batch, and more frequently for larger batches.

Quality Control Charts are charts with acceptable ranges of the values of quality control checks. If a value falls outside the appropriate range, immediate evaluation and assessment of the procedures is required.

A surrogate compound, a substance that has similar properties to the target compounds (but not expected to be present), is added in all applicable tests. It is a measure of the level of recovery achieved in testing.

Uncertainty measurements are used to estimate the range of uncertainty of a certain result.

The specific types and frequency of QC sample analysis differ from method to method and section to section. Individual method specific QC sample criteria are outlined in the each Methods SOP.

SOPs will be update annually or more often if changes are deemed necessary. SOPs are stored as a linked .pdf file in the test portion of the LIMS. This is done by right clicking on the SOP tab of the test screen and adding the appropriate path where the current SOPs are located on the server. The QAO will update these links as necessary.

An initial demonstration of capability is performed each time there is a change in instrument type, personnel, or test method. A minimum of 4 replicate control spikes are prepared and analyzed according to the test method. Sample results are compared against current acceptable LCS recovery limits.

#### Precision, Accuracy, Detection Levels

#### Precision

The laboratory uses sample duplicates to assess precision. A duplicate sample is analyzed for each batch of 20 samples (5% frequency) when possible. HEAL requires the RPD to fall within the 99% confidence interval of established control charts or a RPD of less than 20 if control charts are not available. RPD's greater than these limits are considered out-of-control and require an appropriate response. Allowances can be made for high RPD values when the sample results are above the detection limit but less than less than 5X the detection limit. Criteria (based on sample matrix and methodology) for these situations require analyst/supervisor review to determine appropriate corrective action required.

#### Accuracy

The accuracy of an analysis refers to the difference between the calculated value and the actual value of a measurement. The accuracy of a laboratory result is evaluated by comparing the measured amount of QC reference material recovered from a sample and the known amount added. Control limits are established for each analytical method and sample matrix. Recoveries are assessed to determine the method efficiency and/or the matrix effect.

Analytical accuracy is expressed as the percent recovery (%R) of an analyte or parameter. A known amount of analyte is added to an environmental sample before the sample is prepared and subsequently analyzed. The equation used to calculate percent recovery is:

%Recovery = {(concentration\* recovered )/(concentration\* added)} X 100

#### \*or amount

HEAL requires that the Percent Recovery to fall within the 99 % confidence interval of established control limits. A value that falls outside of the confidence interval requires

a warning and process evaluation. The confidence intervals are calculated by determining the mean and sample standard deviation. If control limits are not available, the range of 85 to 115% is used unless the specific method dictates otherwise. Percent Recoveries outside of this range mandate additional action such as analyses by Method of Standard Additions, additional sample preparation(s) where applicable, method changes, out-of-control action or data qualification.

#### Detection Limit

Current practices at HEAL define the Detection Limit (DL) as the smallest amount that can be detected above the baseline noise in a procedure within a stated confidence level.

HEAL presently utilize an Instrument Detection Limit (IDL), a Method Detection Limit (MDL), and a Practical Quantitation Limit (PQL). The relationship between these levels is approximately

IDL: MDL: PQL = 1:5:5.

The IDL is a measure of the sensitivity of an analytical instrument. The IDL is the amount which, when injected, produces a detectable signal in 99% of the analyses at that concentration. An IDL can be considered the minimum level of analyte concentration that is detectable above random baseline noise.

The MDL is a laboratories measure of the sensitivity of an analytical method. An MDL determination (also outlined in SW-846 Appendix B part 136) consists of replicate spiked samples carried through all necessary preparation steps. The spike concentration is three times the standard deviation of three replicates of spikes. Seven replicates are spiked and then analyzed successively and their Standard Deviation (s) calculated. The method detection limit (MDL) can be calculated using the standard deviation according to the formula:

#### MDL = s \* t (99%)

Where t (99%) is the student's t value for the 99% confidence interval. It depends on the number of trials used in calculating the sample standard deviation, so choose the appropriate value according to the number of trials.

Number of Trials	t(99%)
6	3.36
7	3.14
8	3.00
9	2.90

The calculated MDL must not be less than 10 times the spiked amount or the study must be performed again with a lower concentration.

The PQL is significant because different laboratories can produce different MDLs although they may employ the same analytical procedures, instruments and sample matrices. The PQL is about two to five times the MDL and represents a practical,

and routinely achievable, reporting level with a good certainty that the reported value is reliable. It is often determined by regulatory limits. The reported PQL for a sample is dependent on the dilution factor utilized during sample analysis.

#### Quality Control Parameter Calculations

#### Mean

The sample mean is also known as the arithmetic average. It can be calculated by adding all of the appropriate values together, and dividing this sum by the number of values.

Average =  $(\Sigma x_l) / n$ 

 $x_1$  = the value x in the  $J^{th}$  trial n = the number of trials

#### Standard Deviation

The sample standard deviation, represented by s, is a measure of dispersion. The dispersion is considered to be the difference between the average and each of the values  $x_i$ . The variance,  $s^2$ , can be calculated by summing the squares of the differences and dividing by the number of differences. The sample standard deviation, s, can be found by taking the square root of the variance.

Standard deviation = s =  $\left[\sum (x_1 - average)^2 / (n - 1)\right]^{\frac{1}{2}}$ 

Percent Recovery (MS, MSD, LCS and LCSD)

Percent Recovery = <u>(Spike Sample Result – Sample Result)</u> X100 (Spike Added)

Student's + Distribution

#### Confidence Intervals

Confidence intervals are calculated using the average (x), the sample standard deviation (s), and the Student's t distribution (s-dist), which depends on the number of values used to calculate the average and sample standard deviation.

The formula is: confidence interval =  $x \pm s^*$  s-dist

			antotun	Sumuuu					
	(1)	in central	91			12. <b>1</b> , 1979			
95 %	2.262	2.145	2.093	2.064	2.042	2.021	2.000	1.980	1.960
99%	3.250	2.977	2.861	2.797	2.750	2.704	2.660	2.617	2.576

Unless there is insufficient data, at least 20 values will always be used in calculating the confidence intervals.

#### RPD (Relative Percent Difference)

Analytical precision is expressed as a percentage of the difference between the results of duplicate samples for a given analyst. Relative percent difference (RPD) is calculated as follows:

RPD = 2<u>x (Sample Result – Duplicate Result)</u> X 100 (Sample Result + Duplicate Result)

#### Uncertainty Measurements

All procedures allow for some uncertainty. For most analyses the components and estimates of uncertainty are reduced by following well established test methods. To further reduce uncertainty, results are generally not reported below the lowest calibration point (PQL) and above the highest calibration point (UQL). Ranges of uncertainty are also calculated using LCS recoveries. These are kept on file with the QAO and are updated annually.

 $CF=(A_x)/(C_x)$ 

#### **Calibration Calculations**

1. Response Factor or Calibration Factor:

$$\mathsf{RF}=((\mathsf{A}_{\mathsf{x}})(\mathsf{C}_{\mathsf{is}}))/((\mathsf{A}_{\mathsf{is}})(\mathsf{C}_{\mathsf{x}}))$$

a. Average RF or CF

 $RF_{AVE} = RF_i / n$ 

b. Standard Deviation

 $s = SQRT \{ [\Sigma (RF_i - RF_{AVE})^2] / (n-1) \}$ 

c. Relative Standard Deviation

#### $RSD = s / RF_{AVE}$

Where:

 $A_x = Area of the compound$ 

 $C_x = Concentration of the compound$ 

 $A_{is} = Area of the internal standard$ 

C<sub>is</sub> = Concentration of the internal standard

n = number of pairs of data

RF<sub>1</sub> = Response Factor (or other determined value)

RF<sub>AVE</sub> = Average of all the response factors

 $\Sigma$  = the sum of all the individual values

#### 2. Linear Regression

y=mx+b

a. Slope (m)

 $\mathbf{m} = (\mathbf{n} \Sigma \mathbf{x}_i \mathbf{y}_i - (\mathbf{n} \Sigma \mathbf{x}_i)^* (\mathbf{n} \Sigma \mathbf{y}_i)) / (\mathbf{n} \Sigma \mathbf{x}_i^2 - (\Sigma \mathbf{x}_i)^2)$ 

b. Intercept (b)

 $b = y_{AVE} - m^*(x_{AVE})$ 

c. Correlation Coefficient (cc)

$$CC(r) = \{ \Sigma((x_i - x_{ave})^*(y_i - y_{ave})) \} / \{ SQRT((\Sigma(x_i - x_{ave})^2)^*(\Sigma(y_i - y_{ave})^2)) \}$$

Or

 $CC (r) = [(\Sigma w * \Sigma w xy) - (\Sigma w x * \Sigma w y)] / (sqrt( ( [(\Sigma w * \Sigma w x<sup>2</sup>) - (\Sigma w x * \Sigma w x)] * [(\Sigma w * \Sigma w y<sup>2</sup>) - (\Sigma w y * \Sigma w y)])))]$ 

d. Coefficient of Determination

 $COD(r^2) = CC^*CC$ 

Where:

 $y = Response (Area) Ratio A_x/A_{is}$ 

 $x = Concentration Ratio C_x/C_{is}$ 

m = slope

b = intercept

n = number of replicate x,y pairs

x<sub>i</sub> = individual values for independent variable

yi = individual values for dependent variable

 $\Sigma$  = the sum of all the individual values

 $x_{ave}$  = average of the x values

 $y_{ave} = average of the y values$ 

w = weighting factor, for equal weighting w=1

 $\Sigma$  = the sum of the values indicated

3. Quadratic Regression

 $y = ax^2 + bx + c$ 

a. Coefficient of Determination

$$COD (r^{2}) = (\Sigma(y_{i}-y_{ave})^{2} - \{[(n-1)/(n-p)] * [\Sigma(y_{i}-Y_{i})^{2}]\}) / \Sigma(y_{i}-y_{ave})^{2}$$

Where:

 $y = Response (Area) Ratio A_x/A_{is}$ 

 $x = Concentration Ratio C_x/C_{is}$ 

 $a = x^2$  coefficient

b = x coefficient

c = intercept

 $y_i$  = individual values for each dependent variable

 $x_i$  = individual values for each independent variable

 $y_{ave} = average of the y values$ 

 $y_{ave} = average of the y values$ 

n = number of pairs of data

p = number of parameters in the polynomial equation (i.e., 3 for third order, 2 for second order)

 $Y_{i} = ((2^{*}a^{*}(C_{x}/C_{is})^{2})-b^{2}+b+(4^{*}a^{*}c))/(4a)$ 

b. Coefficients (a,b,c) of a Quadratic Regression

 $a = S_{\{x2y\}}S_{\{xx\}}-S_{\{xy\}}S_{\{xx2\}} / S_{\{xx2\}}S_{\{x2x2\}}-[S_{\{xx2\}}]^2$ 

 $b = S_{(xy)}S_{(x2x2)} - S_{(x2y)}S_{(xx2)} / S_{(xx)}S_{(x2x2)} - [S_{(xx2)}]^{2}$ 

 $c = [(\Sigma yw)/n] - b^*[(\Sigma xw)/n] - a^*[\Sigma(x^2w)/n]$ 

Where:

n = number of replicate x,y pairs

 $\begin{array}{l} x = x \ values \\ y = y \ values \\ w = S^{-2} \ (\Sigma S^{-2}/n) \\ S_{(xx)} = (\Sigma x^2 w) - [(\Sigma xw)^2 \ / \ n] \\ S_{(xy)} = (\Sigma xyw) - [(\Sigma xw)^* (\Sigma yw) \ / \ n] \\ S_{(x22)} = (\Sigma x^3 w) - [(\Sigma xw)^* (\Sigma x^2 w) \ / \ n] \\ S_{(x22)} = (\Sigma x^2 yw) - [(\Sigma x^2 w)^* (\Sigma yw) \ / \ n] \\ S_{(x222)} = (\Sigma x^4 w) - [(\Sigma x^2 w)^* (\Sigma yw) \ / \ n] \\ S_{(x222)} = (\Sigma x^4 w) - [(\Sigma x^2 w)^2 \ / \ n] \\ Or \ lf unweighted calibration, w=1 \\ S(xx) = (Sx2) - [(Sx)^2 \ / \ n] \\ S(xy) = (Sx2) - [(Sx)^* (Sy) \ / \ n] \\ S(x2) = (Sx3) - [(Sx)^* (Sx2) \ / \ n] \\ S(x2y) = (Sx2y) - [(Sx2)^* (Sy) \ / \ n] \\ S(x2x2) = (Sx4) - [(Sx2)^2 \ / \ n] \end{array}$ 

#### 10.0 Data Reduction, Validation, Reporting, and Record Keeping

All data reported must be of the highest possible accuracy and quality. During the processes of data reduction, validation, and report generation, the work is thoroughly checked to insure that error is minimized.

#### Data Reduction

The analyst who generated the data usually performs the data reduction. The calculations include evaluation of surrogate recoveries (where applicable), response factor calculations for manual calculations, and other miscellaneous calculations related to the sample quantitation.

If the results are computer generated, then the formulas must be confirmed by hand calculations.

#### Validation

A senior analyst, most often the section supervisor, validates the data. All data undergoes peer review. If an error is detected it is brought to the analyst attention to rectify and further checks ensure that all data for that batch is sound. Previous and/or common mistake are stringently monitored throughout the validation process. Data is reported using appropriate significant figure criteria. In most cases, two significant digits are utilized, but three significant digits can be used in QC calculations. Significant digits are not rounded until after the last step of a sample calculation. All final reports undergo a review by the management to provide a logical review of all the results before they are released to the client.

If data is to be manually transferred from one medium to another, the transcribed data is checked by a peer. This includes data typing, computer data entry, chromatographic data transfer, data table inclusion to a cover letter, or when data results are combined with other data fields.

All hand written data from run logs, analytical standard logbooks, hand entered data logbooks, or on instrument generated chromatograms, are systematically archived should the need for future retrieval arise.

Data that is being reported is treated with the utmost respect and care to help eliminate errors. Unethical practices will be detected through peer review and be dealt with the utmost severity.

#### **Reports and Records**

The reports are compiled by the Laboratory Information Management System (LIMS). Most data is transferred directly from the instruments to the LIMS. After being processed by the analyst and reviewed by the section supervisor, reports are approved and signed by the senior laboratory management. A comparative analysis of the data is performed at this point. For example, if TKN and NH3 are analyzed on the same sample the NH3 result should never be greater than the TKN result. Lab results and reports are released only to appropriately designated individuals. Release of the data can be by fax, email, diskette deliverables, or mailed hard copy.

When a project is completed, the project file folder is stored with a hard copy of the report, relevant supporting data, and the quality assurance/control worksheets. These folders are kept on file and are arranged by project number. Additionally, all electronic data is backed up daily on the HEAL main server. The backup includes raw data, chromatograms and report documents. Hard copies of chromatograms are stored separately according to the instrument and the analysis date. All records and analytical data reports are retained in a secure location as permanent records for a minimum period of five years (unless specified otherwise in a client contract). Access to archived information shall be documented with an access log. Access to archived electronic reports and data will be protected by a project manager password. In the event that HEAL transfers ownership or terminates business practices, complete records will be maintained or transferred according to the client's instructions.

After issuance, the original report shall remain unchanged. If a correction to the report is necessary, then an additional document shall be issued. This document shall have a title of "Addendum to Test Report or Correction to Original Report", or equivalent. Demonstration of original report integrity comes in two forms. First, the report date is included on each page of the final report. Second, each page is numbered in sequential order, making the addition or omission of any data page(s) readily detectable.

#### 11.0 Corrective Action

The limits that have been defined for data acceptability also form the basis for corrective action initiation. Initiation of corrective action occurs when the data generated from continuing calibration standard, sample surrogate recovery, laboratory control spike, matrix spike or sample duplicates exceed acceptance criteria. If corrective action is necessary, the analyst or the section supervisor will coordinate to take the following steps to determine and correct the measurement system deficiency:

Check all calculations and data measurements systems (Calibrations, reagents, instrument performance checks etc.).

Assure that proper procedures were followed.

Unforeseen problems that arise during sample preparation and/or sample analysis that lead to treating a sample differently from documented procedures shall be documented with a corrective action report. The section supervisor and lab manager shall be made aware of the problem at the time of the occurrence. See the SOP regarding departures from documented procedures.

Continuing calibration standards below acceptance criteria can not be used for reporting analytical data unless method specific criteria states otherwise.

An analyte above control limits in a Continuing Calibration may be acceptable if the previous continuing calibration standard was acceptable for that analyte. Further, the target analyte in the samples analyzed after the acceptable calibration standard and before calibration standard with the high bias, are reported as non-detected. Finally, the samples following an analyte that is above control limits for a continuing calibration standard can not be reported for that analyte.

Samples with non-compliant surrogate recoveries should be reanalyzed unless deemed unnecessary by the supervisor for matrix, historical data, or other analysis related anomalies.

Laboratory and Matrix Spike acceptance criteria vary significantly depending on method and matrix. Analysts and supervisors meet and discuss appropriate corrective action measures as spike failures occur.

Sample duplicates with RPD values outside control limits require supervisor evaluation and possible reanalysis.

A second mechanism for initiation of corrective action is that resulting from Quality Assurance performance audits, system audits, inter and intra-laboratory comparison studies. Corrective Actions initiated through this mechanism will be monitored and coordinated by the laboratory QA officer.

All corrective action forms are entered in the LIMs and included with the raw data for peer review, signed by the technical director of the section and included in the case narrative to the client whose samples were affected. All Corrective action forms in the LIMs are reviewed by the QA Officer.

#### 12.0 Quality Assurance Audits, Reports and Complaints

#### Internal/External Systems' Audits, Performance Evaluations, and Complaints

Several procedures are used to assess the effectiveness of the quality control system. One of the methods includes internal performance evaluations, which are conducted by the use of control samples, replicate measurements and use control charts. Another method is external performance audits, which are conducted by the use of inter-laboratory checks, such as participation in laboratory evaluation programs and performance evaluation samples available from a NELAC accredited Proficiency Standard Vendor.

35

Proficiency samples will be obtained twice per year from the appropriate vendor. We also participate in soil and water Underground Storage Tank PT studies. Copies of our results are available upon request.

Quality Assurance Audits are performed annually by the Quality Assurance Officer. They are performed using the guidelines outlined below:

The system audit consists of a qualitative inspection of the QA system in the laboratory and an assessment of the adequacy of the physical facilities for sampling, calibration, and measurement. This audit includes a careful evaluation and review of laboratory quality control procedures. Including but not limited to:

1. Review of staff qualifications, demonstration of capability, and personnel training programs

2. Storage and handling of reagents, standards and samples

3. Standard preparation logbook and LIMS procedures

4. Extraction logbooks

5. Raw data logbooks

6. Analytical logbooks or batch printouts and instrument maintenance logbooks

7. Data review procedures

8. Corrective action procedures

9. Review of data packages is performed regularly by the lab manager/QA Officer.

The Quality Assurance Officer will conduct these audits on an annual basis. Performance evaluation will, in part, be based upon the results obtained on the proficiency results.

#### Complaints

Complaints from clients are documented and given to the laboratory manager. The lab manager shall review the information and contact the client. If doubt is raised concerning the laboratories policies or procedures, then an audit of the section or sections may be performed. All records of complaints and subsequent actions shall be maintained for 3 years unless otherwise stated.

#### Internal and External Reports

The Quality Assurance Officer is responsible for preparation and submission of quality assurance reports to the appropriate management personnel as problems and issues arise. These reports include the assessment of measurement systems, data precision and accuracy, and the results of performance and system audits. Additionally, they also include significant QA problems, corrective actions, and recommended resolution measures. Reports of these Quality Assurance Audits describe the particular activities audiled, procedures utilized in the examination and evaluation of laboratory records, and data validation procedures. Finally, there are procedures for evaluating the performance of Quality Control and Quality Assurance activities, and laboratory deficiencies and the implementation of corrective actions with the review requirements.

#### 13.0 Analytical Protocols Utilized at Hall Environmental Analysis Laboratory, Inc.

- 1. <u>Standard Methods for the Examination of Water and Wastewater:</u> AOHA, AWWA, and WPCG; 20th Edition, 1999.
- 2. <u>Methods for Chemical Analysis of Water and Wastes</u>, USEPA, EPA-600/4-79-020, March 1979 and as amended December, 1982 (EPA-600/4-82-055)
- 3. <u>Test Methods for Evaluating Solid Waste: Physical/Chemical Methods</u>, USEPA SW-846, 3rd Edition, Updates I, II, IIA, IIB, III, December, 1996.
- 4. <u>Methods of Soil Analysis</u>: Parts 1 & 2, 2nd Edition, Agronomy Society of America, Monograph 9
- 5. <u>Diagnosis & Improvement of Saline & Alkali Soils</u>, Agriculture Handbook No. 60, USDA, 1954
- 6. <u>Handbook on Reference Methods for Soil Testing</u>, The Council on Soil Testing & Plant Analysis, 1980 and 1992
- 7. <u>Field and Laboratory Methods Applicable to Overburdens and Mine Soils</u>, USEPA, EPA-600/2-78-054, March 1978
- 8. <u>Laboratory Procedures for Analyses of Oilfield Waste.</u> Department of Natural Resources, Office of Conservation, Injection and Mining Division, Louisiana, August 1988
- 9. <u>Soil Testing Methods Used at Colorado State University for the Evaluation of Fertility</u>, <u>Salinity and Trace Element Toxicity</u>, Technical Bulletin LT B88-2 January, 1988
- 10. <u>Manual of Operating Procedures for the Analysis of Selected Soil, Water, Plant Tissue and</u> <u>Wastes Chemical and physical Parameter.</u> Soil, Water, and Plant Analysis Laboratory, Dept. of Soil and Water Science, The University of Arizona, August 1989
- 11. <u>Sampling Procedures and Chemical Methods in Use at the U.S. Salinity Laboratory for</u> <u>Characterizing Salt-Affected Soils and Water.</u> USDA Salinity Laboratory.
- 12. <u>Procedures for Collecting Soil Samples and Methods of Analysis for Soil Survey.</u> USDA Soil Conservation Service, SSIR No. 1.
- 13. <u>Soil Survey Laboratory Methods Manual.</u> Soil Survey Laboratory Staff. Soil Survey Investigations Report No. 42, version 2.0, August 1992.
- 14. <u>Methods for the Determination of Metals in Environmental Samples</u>, USEPA, EPA-600/4-91-010, June 1991
- 15. <u>The Merck Index, Eleventh Edition</u>, Merck & Co., Inc. 1989.
- 16. Handbook of Chemistry and Physics, 62nd Edition, CRC Press, Inc. 1981-1982.

- 17. <u>Analytical Chemistry of PCB's</u>. Erickson, Mitchell D., CRC Press, Inc. 1992.
- 18. <u>Environmental Perspective on the Emerging Oil Shale Industry</u>, EPA Oil & Shale Research Group.
- 19. Polycyclic Aromatic Hydrocarbons in Water Systems, CRC Press, Inc.

# Appendix A





#### Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Sullé D Albuquerque, NM, 87109

Issue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusolmers: Please verify the current accreditation standing with ORELAP.

MATRIX: Drinking Water Reference EPA 180.1 Code Description 10009208 Total Dissolved Sollicis, dried @ 180 C. Analyto Code Analyte 1955 Residua-filterable (TDS) EPA 200.7 10014003 ICP - metals Analyte Code Analyte 1000 Aluminum 1005 Antimony 1010 Arsenic 1015 Barlum 1020 Beryllium 1025 Boron 1030 Cadmium .1040 Chromlum 1055 Copper 1070 Iron 1075 Lead 1090 Manganese Molybdenum 1100 1105 Nickel 1140 Selenium 1150 Sliver 1175 Τin 1180 Titanium 1185 Vanadium 1190 Zinc EPA 245.1 10036609 Mercury by Cold Vapor Alomic Absorption <u>Analyte</u> Analyte Code 1095 Marcury 10053006 lon chromolography - oniona. EPA 300.0 Analyte Code Analyte Chloride 1575 1730 Fluoride 1810 Nitrate as N 1835 Nitrite 1870 Orthophosphate as P 2000 Sulfate Page 1 of 14



DRELAPID: NM100001 EPACade: NM00001

Certificate: NM100001-005

Certificate: NM100001-005

#### Hall Environmental Analysis Laboratory. Inc.

4901 Hawkins Rd. NE, Suite D Albuquerque, NM, 87109

issue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusoumers: Please verify the current accreditation standing with ORELAP.

EPA 415.1	10078407	Organic carbon - Combusilon or Oxidation
Analvte Code	Analyte	· · · ·
2040	Total Organic Carbon	
EPA 5030B	10153409	Purge and trap for equeous samples
Analyte Code	Analyte	
125	Extraction/Preparation	
EPA 504.1	10083006	EDB/DBCP/TCP mlcro-extraction, GC/ECD
Analyte Code	Analyte	
4570	1,2-Dibromo-3-chloropropane (DBC)	P)
4585	1,2-Dibromoethane (EDB, Ethylene	dbromide)
EPA 524.2	10088809	Volatile Organic Compounds GC/MS Capillary Column
Analyte Code	Annivte	
5105	1,1,1,2-Tetrachloroethane	
5160	1,1,1-Trichlorcethane	
5110	1,1,2,2-Tetrachloroelhane	/
5165	1,1,2-Trichlorcethane	
4630	1,1-Dichloroethane	
4640	1,1-Dichloroethylane	
4670	1,1-Dichioropropene	
5155	1.2,4-Trichiorabenzene	
5210	1,2,4-Trimethylbenzene	
4610	1,2-Dichlorobenzone	
4635	1,2-Dichioroelhane	
4655	1,2-Dichloropropane	
5215	1,3,5-Trimelhylbenzene	
4615	1,3-Dichlorobenzene	
4660	1,3-Dichloropropane	
4620	1,4-Dichlorobenzene	
4535	2-Chlomioluene	
4540	4-Chloratoluane	
5870	4-isopropyllaiuene	
4375	Benzene	
4390	Bromochloromelhane	
4395	Bromodichloromethane	
4400	Bromolorm	
4950	Bromomelhane (Melhyi bromide)	
4455	Carbon tetrachioride	
4475	Chlorobenzene	•
4485	Chiproelhane	
4505	Chieroform	
105	Chipromethane	
4545	cls-1,2-Dichloroethylene	
4575	Dibromochioromethane	
4595	Dibromomelhane	
4765	Ethylbenzene	
4835	Hexachlorobutadiene	
4900	Isopropyibenzene	
5000	Melhyl tert-butyl ether (MTBE)	
4435	n-Bulyibenzene	,
5090	n-Propyidenzene	·
4440	sec-Bulylbenzene	

Page 2 of 14

4901 Hawkins Rd. NE, Suile D Albuquerque, NM, 87109

Issue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 this its supercedes all previous lists for this certificate number. Cusoimers: Please verify the current accreditation standing with ORELAP.

5100	Siyrene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluena
4700	trans-1,2-Dicloroethylene
4685	trans-1,3-Dichloropropylene
5170	Trichloroelhene (Trichloroethylene)
5175	Trichlorofiuoromethane
5235	Vinyl chloride

Certificate: NM100001-005

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Page 3 of 14

4901 Hawkins Rd. NE, Suite D Albuquerque, NM, 87109

Issue Date: 3/1/2007 Expiration Date: 2/20/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusotmers: Please verify the current accreditation standing with ORELAP.

MATRIX: Non-Potable Water Reference Code Description EPA 150.1 10008409 pH - Electrometric Maasumment Analyte Code Anaiyte 1900 pН EPA 160.1 10009208 Total Dissolved Solids, dried @ 180 C. Analyte Code Analyte 1955 Rasidue-filterable (TDS) EPA 300.0 10053006 ton chromatography - anions. Analyte Code Anaivie 1540 Bromide 1575 Chlaride 1730 Fluoride Nirate as N 1810 1840 Nildte as N Orthophosphate as P 1870 2000 Sulfate EPA 3005A 10133207 Acid Digestion of waters for Total Recoverable or Dissolved Metals Analyie Code Analyte 125 Extraction/Preparation EPA 3510C 10138202 Separatory Funnel Liquid-liquid extraction Analyte Code Analvte Extraction/Preparation 126 EPA 5030B 10153409 Purge and trup for equeous samples Analyte Code Analyte 125 Extraction/Preparation EPA 6010B 10155609 ICP - AES Analyte Code Anaivte 1000 Aluminum Antimony 1005 1010 Arsenic 1015 Barium 1020 Baryllium 1025 Baron 1030 Catimium Calcium 1035 Chromium 1040 1050 Coball 1070 1ron 1075 Lead 1085 Magnesium 1090 Manganese Molybdenum 1100 1105 Nickel Potassium 1125 Selenium 1140 1150 Sliver Sodium 1155 Thallium 1165 1175 Tin Titanium 1180

DRELAPID: NM100001 EPACode: NM00001

Certificate: NM100001-005

Page 4 of 14



#### Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Suite D Albuquerque, NM, 87109

Insue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusofmers: Please verify the current accreditation standing with ORELAP.

3035	Uranium	
1185	Vanedium	
1190	Zinc	
EPA 80168	10173601	Non-halogenated organics using GC/FID
Analyte (	Code Analyte	
9369	Diesel range organics (DRO)	
94Q8	Gasoline range organics (GRO)	
EPA 80218	10174806	Aromatic and Halogenated Volatiles by GC with PID and/or ECD Purgs &
Analyte (	Code <u>Analyte</u>	
5210	1,2,4-Trimethylbenzene	
5215	1.3,5-Trimethylbenzene	
4375	Benzene	
4765	Elhylbenzene	
5240	m+p-xylane	
5000	Melhyl lert-butyl ether (MTBE)	
5250	o-Xylene	
5140	Toluene	· · · · · · · · · · · · · · · · · · ·
EPA BOB1A	10178605	Organochiorina Pasticidas by GC/ECD
Analyte	Code Analyte	
7355 -	4,4'-DDD	
7360	4,4'-DDE	
7365	4,4'-DDT	
7025	Aldrin	
7110	alpha-BHC (alpha-Hexachioroc	yclohexane)
7115	beta-BHC (beta-Hexachlorocyc	lahexane)
7105	della-BHC	
7470	Dieldrin	
7510	Endosulfan I	
7515	Endosulían II	
7520	Endosulfan sulfate	
7540	Endrin	
7530	Endrin aldehyde	
7120	gamma-BHC (Lindane, gamma	i-HexachlorocyclohexanE)
7685	Heptachlor	
7690	Heptachtor epoxida	
7810	Methoxychior	
EPA 8082	10179007	Polychlorinated Biphonyis (PCBs) by GC/ECD
Analyte	Code Analyte	
8380	Araciar-1016 (PCB-1016)	
8885	Araclor-1221 (PCB-1221)	
8690	Aracior-1232 (PCB-1232)	
81395	Arocior-1242 (PCB-1242)	
8300	Araclar-1248 (PCB-1248)	
8905	Araclar-1254 (PCB-1254)	
8910	Aracior-1260 (PCB-1260)	
EPA B260B	10184802	Volatile Organic Compounds by purga and trap GC/MS
<u>Analyte</u>	Code Analyte	
5105	1,1,1,2-Tetrachiproethane	
5160	1,1,1-Trichioroethane	
5110	1,1,2,2-Tetrachiproethane	
5165	1,1,2-Trichtoroethane	

ORELAPID: NM100001 EPACade: NM00001

Certificate: NM100001-005

Page 5 of 14

#### Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd, NE, Suite D Albuquerque, NM, 87109

Issue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusoimers: Please verify the current accreditation standing with ORELAP.

4630	1,1-Dichlomethane
4640	1.1-Dichloroethylene
4670	1,1-Dichioropropene
5150	1,2,3-Trichlorobenzene
5180	1.2.3-Trichloropropane
5155	1,2,4-Trichiorabenzene
5210	1,2,4-Trimelhylbenzene
4570	1.2-Dibromo-3-chloropropane (DECP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4510	1,2-Dichiorobenzene
4635	1,2-Dichloroethane
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
6380	1-Methylnaphinalene
4665	2,2-Dichioropropane
4410	2-Butanone (Methyl elhyl kelone, MEK)
4535	2-Chiorotoluene
4860	2-Нехаполе
6385	2-Methyinephthalene
4540	4-Chiorotoluene
4995	4-Melhyl-2-pentanone (MIBK)
4315	Acetone
4375	Benzene
4385	Bromobenzene
4390	Bromochioromethane
4395	Bromodichloromethane
4400	Bramolarm
4950	Bromomethane (Methyl bromide)
4450	Carbon disulfide
4455	Carbon teirachieride
4475	Chlorobenzene
4485	Chloroethane
4505	Chieroform
105	Chloromelhane
4645	cis-1.2-Dichlaraethylene
4680	cis-1,3-Dicitioropropene
4575	Dibromochioromethane
4595	Dibromomelhane
4625	Dichlorodilluoromethane
4650	Dichloromethane (DCM, Methylene chloride)
4765	Ethylbenzene
4835	Hexachlorobutadiene
4900	Isopropylbenzene
5240	m+p-xylene
5000	Methyl ten-bulyl ether (MTBE)
5005	Naphthalene
4435	n-Bulylbenzene
5090	n-Propylbenzene

ORELAPID: NM100001 EPACode: NM00001

Certificate: NM100001-005

Page 6 of 14

5250

# Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd, NE, Suite D Albuquerque, NM, 87109

o-Xylene

Issue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusotmers: Please verify the current accreditation standing with DRSLAP.

4910	p-lsopropylloluene	
4440	sec-Butylbenzene	
- 5100	Styrene	
4445	ient-Butylbanzene	
5115	Tetrachloroethylene (Perchloroethyl	ene)
5140	Toluene	
4700	irans-1,2-Dicloroethylene	
4685	irans-1,3-Dichloropropylene	
5170	Trichloroethene (Trichloroethylene)	
5175	Trichiorofluoromethone	
5235	Vinyi chloride	
5260	Xyisne (total)	
EPA 8270C	10185805	SemiVoliile Omanic compounds by GC/MS
Analyte Code	Analyte	
5155	1,2,4-Trichlorobenzene	· · · · · · · · · · · · · · · · · · ·
4610	1,2-Dichlombenzene	
4615	1.3-Dichlorobenzene	
4520	1,4-Dichiorobenzene	
6835	2,4,5-Trichiorophenol	·
6840	2,4,5-Trichlorophenol	
6000	2.4-Dichlorophenol	,
6130	2.4-Dimethylphenol	
6175	2.4-Dinitrophenol	
8185	2 4-Dinitrotoluene (2.4-DNT)	· · · · · · · ·
6190	2.6-Dializationene (2.6-DNT)	
5795	2-Chlorenaobihalene	
5800	2-Chiprophenol	
6385	2-Melhvinaphibalene	
6400	2-Methylphanol (c-Cresol)	
6460	2-Niiroaniiine	
6490	2-Nitrophenol	
6412	3 8 4 Melhviphenni	
5945	3.3'-Dichlorobenzidine	
5465	3-Nitroaniline	
6140	4.6-Dinitro-2-methylphenol	
5660	4-Bromophenyl phenyl ether	
5700	4-Chloro-3-methylphenol	
5745	4-Chloroanlline	
5825	4-Chiorophenyl phenylelher	
6470	4-Nitroanlline	
6500	4-Nitrophenol	
5500	Acenaphihene	
5505	Acenaphihylene	
5545	Anline	
5555	Anthracene	
123	Azobenzene	
5575	Benzolatanthracene	
5580	Benzolaloyrene	
5585	Benzojbjilupranlhenc	· · · · · ·
5590	Benzoig, hillperviene	
,		Page 7 of 14

ORELAPID: NM100001 EPACode: NM00001

Certificate: 1 NM100001-005

0001-005

#### Hall Environmental Analysis Laboratory. Inc.

4901 Hawkins Rd. NE, Sulle D Albuquerque, NM, 87109

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5600	Banzo(k)Ruoranthane
482	Benzolluoranthane
5610	Benzoic acid
5630	Benzyl alconol
5765	bis(2-Chiaroelinyi)ether
5770	bis(2-Chloroethyloxymethane)
5780	bis(2-Chloroisopropy))ether
6255	bis(2-Ethylhexyl)phthalate (DEHP)
5670	Bulyl benzyl phihalate
5680	Carbazole
5855	Спуьвле
5895	Dibenz[a,ly]anthracene
5905	Dibenzofuran
6070	Dietnyl phihalate
6135	Dimethyl phinalate
5925	Di-n-bulyi phthalate
5200	Di-n-ociyi phihalate
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroelftane
6315	indeno[1.2.3-cd)pyrene
6320	Isophorone
5005	Naphihalene
5015	Nirobenzene
6535	n-Nirosodiphenylamine
6540	n-Nitrosodipropylamine
6605	Pentachlorophenol
6615	Phenanthrens
6625	Phenol
6565	Ругеле
5095	Pyridine
EPA 8310	10187607 Polynucloar Aromatic Hydrocarbons by HPLC/UV-VIS
Analyte Code	Analyte
6380	1-Methylnaphthalene
6385	2-Mathyinaphihalene
5500	Acenaphinene
5505	Acenaphtnylene
5555	Anthracene
5575	Benzoja)anthracene
5580	Велгоја]ругеле
5585	Benzo[b]liuoranthene
5590	Benzo(g,h,i)perylene
5600	Benzo[k]fiuoranlhene
5855	Chrysene
5895	Dibenz(a,h)anthracene

ORELAPID: NM100001 EPACode: NM00001

#### Certificate: NM100001-005



6265

6270

6315

Fluoranthene

indena[1,2,3-cd]pyrene

Fluorene

Page B of 14

### Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Sulte D Albuquerque, NM, 57109

Issue Date: 3/1/2007 Explration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusotmers: Please verify the current accreditation standing with ORELAP.

5005	Naphthalena	
6515	Phenanthrene	
6665	Pyrene	

Certificate: NM100001-005

· · ·		
	 ·	
	· .	Page a or 14
1. S.		
		· ·

#### Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Sulle D Albuquerque, NM, 87109

 Issue Date:
 3/1/2007
 Expiration Date:
 2/29/2008

 As of 3/1/2007 this list supercedes all previous lists for this certificate number.
 Cusotmers:
 Please verify the cummit accreditation standing with ORELAP.

MATRIX: Solids		
Reference	Code	Description
EPA 3050A	10135407	Acid Digestion of Sediments, Studges, and soils
Analyle Code	Analyte	
125	Extraction/Preparation	
EPA 3540C	10140202	Soxhiet Extraction
Analyte Code	Analyte	
125	Extraction/Preparation	
EPA 3545	10140804	Pressurized Fluid Extraction (PFE)
Analyte Code	Analyte	
125	Extraction/Preparation	
EPA 5035	10154004	Closed-System Purge-and-Trap and Extraction for Volatile Organics in So
Analyte Code	Analyte	
125	Extraction/Preparation	
EPA 60108	10155609	ICP - AES
Analyte Code	<u>Analyte</u>	
1000	Aluminum	
1005	Antimony	
1010	Arsenic	·
1015	Barium	
1020	Beryilium	
1025	Boron	
1030	Cadmlum	
1035	Calcium	
1040	Chromium	
1050	Coball	
1055	Copper	
1070	iron	
1075	Lead	
1065	Maonesium	
1090	Manoanese	
1100	Molybdanim	
1105	Nickel	
1125	Potasshim	
1140	Salapium	· ·
1145	Slicon	
1150	Silver	
1155	Sorium	
1185	Thallium	
1175	Tip	
1180	Thanium	
3035	liranium	
1185	Vanadium	
1190	Zine	
EPA 7471A	10166208	Mercury in Solid Wasia by Cold Vanne Atomic Absorption
Analyte Code	Agaivte	
1095	Mercury	
EPA 80158	10173801	Non-helionepated omenics using GC/EID
Anniute Corie	Ansivie	······································
9369	Dieso) range organica (DRO)	
PADA	Gaspline range provides (GRO)	
		ي ماد الم

Certificate?>>NM100001-005

50

Page 10 of 14

Analyte

#### Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Sulte D Albuquerque, NM, 87109

EPA 80216

5210

5215

Analvie Code

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1,2,4-Trimethylbenzene

1,3,5-Trimethylbenzene

10174808

DRELAPID: NM100001 EPACode: NM00001

Certificate: NM100001-005

Aromatic and Halogenated Volatiles by GC with PID and/or ECD Purge &

51

Page 11 of 14

4375	Вепзапе	
4765	Ethylbenzane	
5240	m+p-xylene	·
5000	Methyl terl-butyl ether (MTBE)	
5250	a-Xyiene	
5140	Toluene	
5260	Xyiene (total)	
EPA BOB1A	10178606	Organachlorina Pesticides by GC/ECD
Analyto Code	Analyte	
7355	4,4'-DDD	
7360	4,4'-DDE	
7365	4,4-DDT	
7025	Aldrin	
7110	alpha-BHC (alpha-Hexachlorocyclo	nexane)
7115	beta-BHC (beta-Hexachibrocyclohe	ixane)
7105	della-BHC	
7470	Dieldrin	
7510	Endosulfan 1	
7515	Endosulfan II	
7520	Endosulfan sulfale	
7540	Endrin	
7530	Endrin aldenyde	
7120	gamma-BHC (Lindane, gamma-He	xachiorocyclonexanE)
7685	Heplachlor	х.
7690	Heptachior epoxide	
7810	Melhoxychior	
EPA 8082	10179007	Polychiprinated Biphanyls (PCBs) by GC/ECD
Analyte Code	Analyte	
8580	Arocior-1016 (PCB-1015)	· · ·
8985	Aroclor-1221 (PCB-1221)	· . · · ·
8690	Arocior-1232 (PCB-1232)	
8895	Aroclor-1242 (PCB-1242)	
8900	Arocler-1246 (PCB-1248)	
8905	Arocler-1254 (PCB-1254)	
8910	Arocior-1260 (PCB-1260)	
EPA 8260B	10184802	Volatile Organic Compounds by purge and trap GC/MS
Analyte Code	Analyte	
5105	1,1,1,2-Tetrachioroelhane	
5160	1,1,1-Trichlorosthane	N
5110	1,1,2,2-Tetrachloroelhane	
5165	1,1,2-Trichlorosinane	
4630	1,1-Dichlorcelnane	- 2019년 1월 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19일 - 19g - 19 - 19일 - 19g - 19g - 19g - 19g - 19g - 19g - 19g - 19g - 19g - 19
4640	1,1-Dichloroethylene	
4670	1,1-Dichloropropene	
5150	1,2,3-Trichlorobenzene	
5180	1,2,3-Trichtoropropane	
5155	1,2,4-Trichloropenzene	

#### Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Suile D Albuquerque, NM, 87109

Expiration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusotmers: Please verify the current accreditation standing with ORELAP.

5210 1,2,4-Trimethylbenzene 4570 1,2-Dibromo-3-chloropropane (DBCP) 4585 1,2-Dibromoethane (EDB, Ethylene dibromide), 4510 1,2-Dichlorobenzens 1,2-Dichioroelhane 4635 1.2-Dichioropropane 4655 5Ż15 1,3,5-Trimelinylbenzene 1,3-Dichlorobenzene 4615 1.3-Dichloropropane 4660 4620 1,4-Dichlorobenzene 6380 1-Methylnaphlhaiene 4665 2.2-Dichioropropane 4410 2-Bulanone (Melhyl ethyl ketone, MEK) 4535 2-Chlorololuene 4860 2-Hexanone 2-Melinyinaphthalene 6385 4540 4-Chlorololuane 4995 4-Methyl-2-pentanone (MIBK) 4315 Acetone 4375 Benzene 4385 Bromobenzene 4390 Bromachieromethane Bromodichioromelinane 4395 4400 Bromolorm 4950 Bromomethane (Melhyl bromide) Carbon disulfide 4450 4455 Carbon tetrachioride 4475 Chlorobenzene Chioroethane 4485 4505 Chioraiarm 105 Chioromeihane cls-1,2-Dichloroethylene 4645 4680 cis-1,3-Dichloropropene 4575 Dibromochioromethane 4595 Dibromomelhane Dichlorodliluoromethane 4625 Dichloromethane (DCM, Methylene chloride) 4650 Ethylbenzene 4765 4835 Hexacillorobuladiene 4900 Isopropylbenzene 5240 m+p-xylene Methyl ten-bulyl einer (MTBE) 5000 5005 Naphthaiene n-Buiylbenzene 4435 5090 n-Propylbenzene 5250 o-Xylene 4910 p-isopropylioluene sec-Bulyicenzene 4440 5100 Styrene

tert-Bulylbenzene

Tetrachlomethylene (Perchloroethylene)

4445

5115

issue Date: 3/1/2007

Certificate: NM10D001-005

Page 12 of 14
#### ORELAP Fields of Accreditation

#### Hall Environmental Analysis Laboratory. Inc.

4901 Hawkins Rd. NE, Sulle D Albuquerque, NM, 87109

Issue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusotmers: Please verify the current accreditation standing with ORELAP.

5140	Toluene	<b>`</b>			
4700	trans-1,2-Dicloroethylene				
4685	trans-1,3-Dichtoropropytene				
5170	Trichtoroethene (Trichtoroethylene)				
5175	Trichlorofluoromathane				· .
5235	Vinyl chloride				
5260	Xyiene (total)				
EPA 8270C	10185805	SemiVolillia Organic c	ompounds by GD/MS		
- Analyte Code	<u>Anaivte</u>	· .	• •		
5155	1,2,4-Trichlorobenzens				· · · ·
4510	1,2-Dichlorobenzene				
4615	1,3-Dichlorobenzene	· ·			
4620	1,4-Dichlorobenzene			, ,	,
6835	2,4,5-Trichiorophenol				
6840	2,4,8-Trichlorophenol				
6000	2,4-Dichlorophenol				
6130	2,4-Dimethylphenol				
6175	2,4-Dinitrophenol				
6185	2,4-Dinitrolaluene (2,4-DNT)				
6190	2,6-Dinitrololuene (2,6-DNT)				
5795	2-Chioronaphinalene				
5800	2-Chiorophenol				
6385	2-Melhyinaphthalene				
6400	2-Methylphenol (o-Cresol)				
6460	2-Nitroanliine				
6490	2-Nitrophenol				
6412	3 & 4 Methylphenol				
5945	3,3'-Dichiombenzidine				
6485	3-Nilroaniline				
6140	4,6-Dinitro-2-methylphenol				
5650	4-Bromophenyl phenyl ether				
5700	4-Chloro-3-methylphenol				
5745	4-Chloroanlline				
5825	4-Chlorophenyl phenylelher			,	
6470	4-Nitroanlline				
6500	4-Nitrophenol				
5500	Acenaphthene				
5505	Acenaphthyiene			x	
5545	Anlline		•		
5555	Anthracene			•	•
123	Azobenzene			•	
5575	Benzo[a]anihracene				
5580	Banzo[a]pyrene				
5585	Benzo[b]/luoranthene	,			
- 5590	Benzolg,h,ijperviene		÷ .		1
5810	BenzolC acid				
5630	Benzyl alcohol				· ·
5760	bis(2-Chloroethoxy)methane				
5765	bis(2-Chloroethyl)ether		· ·		
5780	bis(2-Chloroisopropyl)alnar				
6255	bis(2-Ethylhexyl)phinalate (DEHP)	}		•	

Page 13 of 14

53

ORELAPID: NM100001 EPACode: NM00001

Certificate: NM100001-005

4901 Hawkins Rd. NE, Sulte D Albuquerque, NM, 87109

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5670	Butyl benzyl philialate	·
5680	Carbazole	
5855	Chrysene	
5895	Dipenzia,h)anthracene	
5905	Dipenzoluran	*
6070	Dietnyl phinalate	
6135	Dimethyl phihalate	
5925	Di-n-butyi phihalale	
62D0	Di-n-octyl phthalate	
6265	Fluoranthene	
6270	Fluorane	
6275	Hexachlorobenzene	
4835	Hexachlprobutadiene	
6285	Hexachlorocyclopeniadiene	
4840	Hexachioroethane	
6315	indeno[1,2,3-cd]pyrene	
6320	Isophorane	
5005	Naphlhaiene	
5015	Nirobenzene	
6530	n-Nitrasodimethylamine	
6535	n-Nilrosodiphenylamine	
6540	n-Nitrosodipropylamine	
6605	Pentachlorophenol	
6615	Phenanlhrene	
6625	Phano	
6665	Pyrene	
5095	Pyridine	
EPA 8310	10187607	Polynuclear Aromatic Hydrocarbons by HPLC/UV-VIS
Analyte Code	Analyte	
6380	1-Methyinaphthaiene	
<b>638</b> 5	2-Melhyinaphthaiane	
5500	Acenaphlinene	
5505	Acenaphinylene	
5555	Anihracene	
5575	Benzolajanthracene	
5580	Benzo[a]pyrene	
5585	Benzo(b)Nuoranthene	
5590	Benzo(g,h,i)perylene	
5600	Benzo[k]fluoranthene	
5855	Chrysene	
5895	Dibenz(a,h)anthracene	
6265	Fluoranihene	·
6270	Et	
<b>FR4 F</b>	Flubrene	
6312	Flubrene Indeno(1;,2,3-cd)pyrene	
5005	Fladrene Indeno[1;2,3•cd]pyrene Naphihalene	

#### ORELAPID: NM100001 EPACoda: NM00001

Certificate: NM100001-005

Pyrene

6665

Page 14 of 14



#### Arizona Department of nealth Services Office of 1 pratory Licensure, Certification & Train 250 worth 17th Avenue, Phoenix, AZ 85007

#### Thursday, September 7 2006

56

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Page:



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AZ0682 ib Director: Mr. Scott Hallenbeck Lab Name: Hall Environmental Analysis Laboratory Phone: (505) 345-3975

rogram HW					
Parameter	EPA Method	Billing Code	Cert Date		
Aiuminum	EPA 6010B	MTL3	10/20/05		
Arsenic	EPA 6010B	· MTL3	10/20/05		
- Barium	EPA 6010B	MTL3.	10/20/05		
Beryllium	EPA 6010B	MTL3	10/20/05		
C10-C32 Hydrocarbons	8015AZ	VDC4			
Cadmium	EPA 60108	MTL3	10/20/05		
Calcium	EPA 60108	MTLB	10/20/05		
Chromium Tola	EPA 60108	MTL3	10/20/05		
Соррег	EPA 6010B	MTL3	10/20/05		
Funnel Liquid-Liquid Extraction	EPA 3510C	•			
Iron	EPA 6010B	MTL3	10/20/05		
Lead	EPA 60108	MTL3	10/20/05		
Magnesium	EPA 6010B	MTL3	10/20/05		
Manganese	EPA 6010B	MTL3	10/20/05		
Mercury	EPA 7470A	MTL5	10/20/05		
Mercury	EPA 7471A 、	MTL5	10/20/05		
Nickel	EPA 60108	MTL3	10/20/05		
Nonhalogenated Volatile Organics	EPA 8015B	VOC3	10/20/05		
Polynuciear Aromatic Hydrocarbons	EPA 8310	SOC13			
Polassium	EPA 6010B	MTL3	10/20/05		
Pressurized Fluid Extraction	EPA 3545	•			
Purge And Trap	EPA 5030B	٠	10/20/05		
Purge And Trap	EPA 5035	•	10/20/05		
Sediments, Sludges And Soils	EPA 3050B	*	10/20/05		
Selenium	EPA 6010B	MTL3			
Silver	EPA 6010B	MTL3	10/20/05		
Sadium	EPA 6010B	MTL3	10/20/05		
Total Recoverable in Water	EPA 3005A	•	10/20/05		
Volatile Organics	EPA 80218	VOC1	10/20/05		
Volatile Organics	EPA 8260B	VOC8	10/20/05		
Zinc	EPA 6010B	MTL3	10/20/05		
Total Licensed Parameters in this Program: 31		·			
Instruments		Jantity	D		
GAS CHROMATOGRAPH		2	09/06		
GAS CHROMATOGRAPH/MASS SPECTROMETER		1	D8/11		
INDUCTIVELY COUPLED PLASMA SPECTROMETER		1	08/11		
MERCURY ANALYZER		1			

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#### Arizona Department of Health Services Office of Lastrory Licensure, Certification & Train 250 worth 17th Avenue, Phoenix, AZ 85007

Thursday, September 7 2006

- 57

Lab Name: Hall Environmental Analysis Laboratory

L	Softwares			· · · · ·		
Ī	VARIAN STAR - GCMS		 · ·	,		
	PERKIN ELMER - ICP					
	VARIAN GALAXIE AND CUSTOM	WRITTEN-GC			۰.	• •

## Section 11.0 Chemical Analytical Reports

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Title	Tab Number
Groundwater First Quarter 2007	9
Groundwater Second Quarter 2007	10
Groundwater Third Quarter 2007	11
Groundwater Fourth Quarter 2007	12
Soil Gas First Quarter 2007	13
Soil Gas Second Quarter 2007	14
Soil Gas Third Quarter 2007	15
Soil Gas Fourth Quarter 2007	16
GAC Analysis – January to December 2007	17



#### COVER LETTER

Friday, March 02, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace - 1st Quarter 2007

Dear Cindy Hurtado:

Order No.: 0702319

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 2/27/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENI:	San Juan Refining			Client Sample	D: 1P-8	
Lab Order:	0702319			Collection Da	te: 2/26/2	007 9:40:00 AM
Project:	River Terrace - 1st Quart	er 2007		Date Receiv	ed: 2/27/2	007
Lab ID:	0702319-01			Matr	ix: AQUE	EOUS
Analyses	1	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Organics (DRO)	2.1	1.0	mg/L	1	2/28/2007 10:49:01 AM
Motor Oil Rang	je Organics (MRO)	ND	5.0	mg/L	. 1	2/28/2007 10:49:01 AM
Surr: DNOP		113	58-140	%REC	1	2/28/2007 10:49:01 AM
EPA METHOD	8015B: GASOLINE RANGE				- - - 	Analyst: NSB
Gasoline Rang	e Organics (GRO)	70	0.50	mg/L	10	2/27/2007 8:50:26 PM
Surr: BFB		120	79.2-121	%REC	10	2/27/2007 8:50:26 PM
		•				
EPA METHOD	8021B: VOLATILES				i	Analyst: NSB
Methyl tert-but	yl ether (MTBE)	ND	25	μg/L	10	2/27/2007 8:50:26 PM
Benzene		ND	10	µg/L	10	2/27/2007 8:50:26 PM
Toluene		ND	10	µg/L	10	2/27/2007 8:50:26 PM
Ethylbenzene		1300	100	µg/L	100	2/27/2007 8:17:42 PM
Xylenes, Total		13000	200	µg/L	100	2/27/2007 8:17:42 PM
Surr: 4-Bron	nofluorobenzene	95.6	70.2-105	%REC	10 '	2/27/2007 8:50:26 PM

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#### Hall Environmental Analysis Laboratory, Inc.

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Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 7





Date: 02-Mar-07

CLIENT:	CLIENT: San Juan Refining			C	Client Sample ID:	t Sample ID: TP-5			
Lab Order:	o Order: 0702319 Collection Date:		2/26/2	2007 10:20:00 AM					
Project:	River Terrace - 1st Qu	arter 2007			Date Received:	2/27/2	2007		
Lab ID:	0702319-02				Matrix:	AQUI	EOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE	<u> </u>					Analyst: SCC		
Diesel Range O	rganics (DRO)	ND	1.0		mg/L	1.	2/28/2007 11:23:27 AM		
Motor Oil Range	e Organics (MRO)	ND	5.0		mg/L	1	2/28/2007 11:23:27 AM		
Surr: DNOP		118	58-140		%REC	1	2/28/2007 11:23:27 AM		
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB		
Gasoline Range	e Organics (GRO)	85	5.0		mg/L	100	3/1/2007 9:55:06 AM		
Surr: BFB		113	79.2-121		%REC	100	3/1/2007 9:55:06 AM		
EPA METHOD	8021B: VOLATILES						Analyst: <b>NSB</b>		
Methyl tert-buty	l ether (MTBE)	ND	25		µg/L	10	2/28/2007 1:53:21 PM		
Benzene		ND	10		µg/L	10	2/28/2007 1:53:21 PM		
Toluene		ND	10		µg/L	10	2/28/2007 1:53:21 PM		
Ethylbenzene		1300	50		µg/L	50	2/27/2007 9:55:37 PM		
Xylenes, Total		18000	200		µg/L	100	3/1/2007 9:55:06 AM		
Surr: 4-Brom	ofluorobenzene	91.2	70,2-105		%REC	50	2/27/2007 9:55:37 PM		

Qualifiers:	*
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ND

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
  - Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

Date: 02-Mar-07

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit





CLIENT:	San Juan Refining			Client Sample	<b>ID:</b> TP-2	
Lab Order: 0702319				<b>Collection D</b>	ate: 2/26/2	007 10:45:00 AM
Project:	River Terrace - 1st Qu	arter 2007		Date Receiv	ved: 2/27/2	007
Lab ID:	0702319-03			Mat	rix: AQUE	EOUS y
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE		· · · · ·			Analyst: SCC
Diesel Range C	Organics (DRO)	2.1	1.0	mg/L	1	2/28/2007 11:57:38 AM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	2/28/2007 11:57:38 AM
Surr: DNOP		93.8	58-140	%REC	1	2/28/2007 11:57:38 AM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Rang	e Organics (GRO)	94	5.0	mg/L	100	2/27/2007 10:28:23 PM
Surr: BFB		115	79.2-121	%REC	100	2/27/2007 10:28:23 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-buty	yl ether (MTBE)	ND	-250	µg/L	100	2/27/2007 10:28:23 PM
Benzene		4300	100	µg/L	100	2/27/2007 10:28:23 PM
Toluene		ND	100	µg/L	100	2/27/2007 10:28:23 PM
Ethylbenzene		4300	100	µg/L	100	2/27/2007 10:28:23 PM
Xylenes, Total		19000	200	µg/L	100	2/28/2007 3:23:25 PM
Surr: 4-Bron	nofluorobenzene	92.1	70.2-105	%REC	100	2/27/2007 10:28:23 PM

Value above quantitation range Analyte detected below quantitation limits

Not Detected at the Reporting Limit ND

· S Spike recovery outside accepted recovery limits

Qualifiers:

\*

E

J

Value exceeds Maximum Contaminant Level

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 3 of 7



Date: 02-Mar-07

CLIENT:	San Juan Refining			C	lient Sample ID:	TP-6		
Lab Order:	0702319		Collection Date:			2/26/2	2007 12:45:00 PM	
Project:	River Terrace - 1st Qu	arter 2007			Date Received:	2/27/2	2007	
Lab ID:	0702319-04				Matrix:	AQU:	EOUS	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	3015B: DIESEL RANGE						Analyst: SCC	
Diesel Range O	rganics (DRO)	ND	1.0		mg/L	1	2/28/2007 12:32:01 PM	
Motor Oil Range	e Organics (MRO)	ND	5.0		mg/L	1	2/28/2007-12:32:01 PM	
Surr: DNOP		114	58-140		%REC	1	2/28/2007 12:32:01 PM	
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: <b>NSB</b>	
Gasoline Range	Organics (GRO)	0.28	0.050		mg/L	1	2/28/2007 4:53:51 PM	
Surr: BFB		122	79.2-121	S	%REC	1	2/28/2007 4:53:51 PM	
EPA METHOD	8021B: VOLATILES						Analyst: <b>NSB</b>	
Methyl tert-butyl	ether (MTBE)	ND	2.5		µg/L	1	2/28/2007 4:53:51 PM	
Benzene		ND	1.0		µg/L	1	2/28/2007 4:53:51 PM	
Toluene		ND	1.0		µg/L	1	2/28/2007 4:53:51 PM	
Ethylbenzene		ND	1.0		hð∖Γ	1	2/28/2007 4:53:51 PM	
Xylenes, Total		ND	2.0		µg/L	1	2/28/2007 4:53:51 PM	
Surr: 4-Brome	ofluorobenzene	91.4	70.2-105		%REC	1	2/28/2007 4:53:51 PM	

Date: 02-Mar-07

Qualifiers:

\* Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	San Juan Refining			Client Sample I	D: 1P-1			
Lab Order:	0702319			Collection Dat	te: 2/26/2	007 1:10:00 PM		
Project:	River Terrace - 1st Qua	rter 2007.		Date Receive	d: 2/27/2	007		
Lab ID:	0702319-05	,		Matri	x: AQUEOUS			
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC		
Diesel Range (	Organics (DRO)	3.0	1.0	mg/L	1	2/28/2007 1:06:25 PM		
Motor Oil Rang	ge Organics (MRO)	ND	5.0	mg/L	1	2/28/2007 1:06:25 PM		
Surr: DNOP		111	58-140	%REC	1	2/28/2007 1:06:25 PM		
EPA METHOD	8015B: GASOLINE RANG	ε				Analyst: NSB		
Gasoline Rang	ge Organics (GRO)	160	5.0	mg/L	100	2/27/2007 11:31:21 PM		
Surr: BFB		117	79.2-121	%REC	100	2/27/2007 11:31:21 PM		
EPA METHOD	8021B: VOLATILES					Analyst: <b>NSB</b>		
Methyl tert-but	tyl ether (MTBE)	ND	250	µg/L	100	2/27/2007 11:31:21 PM		
Benzene		2000	100	µg/∟	100	2/27/2007 11:31:21 PM		
Toluene		ND	100	µg/L	100	2/27/2007 11:31:21 PM		
Ethylbenzene		6300	100	µg/L	100	2/27/2007 11:31:21 PM		
Xylenes, Tota		32000	500	µg/L	250	2/28/2007 5:23:57 PM		
Surr: 4-Broi	mofluorobenzene	91.5	70.2-105	%REC	100	2/27/2007 11:31:21 PM		

E J

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Qualifiers:

Value exceeds Maximum Contaminant Level

Value above quantitation range

Analyte detected below quantitation limits

Not Detected at the Reporting Limit ND

S Spike recovery outside accepted recovery limits

5/11

В Analyte detected in the associated Method Blank

Date: 02-Mar-07

- Н Holding times for preparation or analysis exceeded
- Maximum Contaminant Level
- RL Reporting Limit

Page 5 of 7



MCL

# CLIENT:San Juan RefiningLab Order:0702319Project:River Terrace - 1st Quarter 2007Lab ID:0702319-06

Date: 02-Mar-07

Client Sample ID: TP-9 Collection Date: 2/26/2007 1:35:00 PM Date Received: 2/27/2007 Matrix: AQUEOUS

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE		-			Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	2/28/2007 1:40:47 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	2/28/2007 1:40:47 PM
Surr: DNOP	116	58-140	%REC	1	2/28/2007 1:40:47 PM
EPA METHOD 8015B: GASOLINE RANGI	E				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	2/28/2007 12:31:30 AM
Surr: BFB	108	79.2-121	%REC	1	2/28/2007 12:31:30 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5	µg/L	1	2/28/2007 12:31:30 AM
Benzene	ND	1.0	µg/L	1	2/28/2007 12:31:30 AM
Toluene	ND	<sup>.</sup> 1.0	µg/L	1	2/28/2007 12:31:30 AM
Ethylbenzene	ND	1.0	μg/L	1	2/28/2007 12:31:30 AM
Xylenes, Total	ND	2.0	µg/L	1	2/28/2007 12:31:30 AM
Surr: 4-Bromofluorobenzene	88.1	70.2-105	%REC	1	2/28/2007 12:31:30 AM

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 6 of 7

CLIENT:	San Juan Refining			Client Sample	<b>ID:</b> TP-12	TP-12				
Lab Order:	0702319			Collection Da	ate: 2/26/2	007 2:30:00 PM				
Project:	River Terrace - 1st (	Quarter 2007		Date Receiv	red: 2/27/2	2/27/2007				
Lab ID:	0702319-07			Mat	rix: AQUI	AQUEOUS				
Analyses		Result	PQL	Qual Units	DF	Date Analyzed				
EPA METHOD	8015B: DIESEL RANG	E				Analyst: SCC				
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	2/28/2007 2:15:13 PM				
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	2/28/2007 2:15:13 PM				
Surr: DNOP		117	58-140	%REC	1	2/28/2007 2:15:13 PM				
EPA METHOD	8015B: GASOLINE RA	NGE				Analyst: NSB				
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	2/28/2007 1:01:30 AM				
Surr: BFB		110	79.2-121	%REC	1	2/28/2007 1:01:30 AM				
EPA METHOD	8021B: VOLATILES				1	Analyst: <b>NSB</b>				
Methyl tert-but	yl ether (MTBE)	ND	2.5	µg/L	1	2/28/2007 1:01:30 AM				
Benzene		ND	1.0	µg/L	1	2/28/2007 1:01:30 AM				
Toluene	,	ND -	1.0	µg/L	1	2/28/2007 1:01:30 AM				
Ethylbenzene		ND	1.0	µg/L	1	2/28/2007 1:01:30 AM				

2.0

70.2-105

µg/L

%REC

ND

92.0

#### Hall Environmental Analysis Laboratory, Inc.

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Xylenes, Total

Surr: 4-Bromofluorobenzene

E Value above quantitation rangeJ Analyte detected below quantitation limits

\*

Qualifiers:

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Value exceeds Maximum Contaminant Level

B Analyte detected in the associated Method BlankH Holding times for preparation or analysis exceeded

Date: 02-Mar-07

1

1

MCL Maximum Contaminant Level

RL Reporting Limit

Page 7 of 7

2/28/2007 1:01:30 AM

2/28/2007 1:01:30 AM



## QA/QC SUMMARY REPORT

Client: San Juan Ref	ining						
oject: River Terrace	e - 1st Quar	ter 2007				Work	Order: 0702319
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RP	DLimit Qual
Method: SW8015 Sample ID: MB-12403		MBLK			Batch ID: 12403	Analysis Date:	2/28/2007 9:05:32 AM
Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Sample ID: 1 CS-12403	ND ND	mg/L mg/L / CS	1.0 5.0		Batch ID 12403	Analysis Date:	2/28/2007 9·39·57 AM
Diesel Range Organics (DRO) Sample ID: LCSD-12403	5.097	mg/L LCSD	1.0	102	74 157 Batch ID: <b>12403</b>	Analysis Date:	2/28/2007 10:14:36 AM
Diesel Range Organics (DRO)	5.797	mg/L	1.0	116	74 157	12.8	23
Method: SW8015 Sample ID: 0702319-06A MSD		MSD			Batch ID: R22620	Analysis Date:	2/28/2007 8:31:46 AM
Gasoline Range Organics (GRO) Sample ID: 5ML REAGENT BLA	0.5526	mg/L <i>MBLK</i>	0.050	104	80 115 Batch ID: <b>R22620</b>	1.83 8 Analysis Date:	.39 2/27/2007 7:35:36 AM
Gasoline Range Organics (GRO) Sample ID: 5ML REAGENT BLA	ND	mg/L <i>MBLK</i>	0.050		Batch ID: R22643	Analysis Date:	2/28/2007 11:19:47 AM
Gasoline Range Organics (GRO) Sample ID: 5ML REAGENT BLA	ND	mg/L <i>MBLK</i>	0.050		Batch ID: R22664	Analysis Date:	3/1/2007 7:58:58 AM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	ND	mg/L LCS	0.050		Batch ID: R22620	Analysis Date:	2/28/2007 9:03:38 AM
Gasoline Range Organics (GRO)	0.5236	mg/L LCS	0.050	105	80 115 Batch ID: <b>R22643</b>	Analysis Date:	2/28/2007 11:24:49 PM
Sasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0.5418	mg/L LCS	0.050	108	80 115 Batch ID: <b>R2266</b> 4	Analysis Date:	3/2/2007 6:37:59 AM
Gasoline Range Organics (GRO) Sample ID: 0702319-06A MS	0.5380	mg/L MS	0.050	108	80 115 Batch ID: <b>R22620</b>	Analysis Date:	2/28/2007 7:58:54 AM
Gasoline Range Organics (GRO)	0.5426	mg/L	0.050	102	80 115		

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

ND

S Spike recovery outside accepted recovery limits 8 / 11

## QA/QC SUMMARY REPORT

Client: San Juan R Project: River Terra	efining ace - 1st Qua	rter 2007						Vork	Order: 070231
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPC	DLimit Qual
Method: SW8021									
Sample ID: 0702319-07A MSD		MSD			Batch I	D: <b>R22620</b>	Analysis [	ate:	2/28/2007 2:01:31 AM
Methyl tert-butyl ether (MTBE)	23.45	µg/L	2.5	109	51.2	138	10.4	28	8
Benzene	22.07	µg/L	1.0	110	85.9	113	9.47	27	7.
Toluene	22.03	μg/L	1.0	110	86.4	113	10.6	19	Ð
Ethylbenzene	22.38	µg/∟	1.0	112	83.5	118	11.7	1(	0 R
Xylenes, Total	68.38	µg/L	2.0	112	83.4	122	11.6	13	3
Sample ID: 5ML REAGENT BL	A	MBLK			Batch I	D: R22620	Analysis [	)ate:	2/27/2007 7:35:36 AM
Methyl tert-butyl ether (MTBE)	ND	µg/∟	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0			•			
Ethylbenzene	ND	hð\r	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 5ML REAGENT BL	Α	MBLK			Batch	ID: R22643	Analysis [	)ate:	2/28/2007 11:19:47 AM
Methyl tert-butyl ether (MTBE)	NÐ	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	μg/L	2.0						
Sample ID: 5ML REAGENT BL	Α.	MBLK			Batch	ID: R22663	Analysis [	Date:	3/1/2007 7:58:58 AM
Methyl tert-butyl ether (MTBE)	ND	ug/L	2.5						
Benzene	ND	μg/L	1.0						
Toluene	ND	μg/L	1.0						
Ethylbenzene	ND	μg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: RB-II		MBLK			Batch	ID: R22664	Analysis	Date:	3/2/2007 2:07:52 AM
Methyl tert-butyl ether (MTBE)	ND	ua/L	2.5						
Benzene	ND	ua/L	1.0						
Toluene	ND	ug/L	1.0						
Ethylbenzene	.ND	μg/L	1.0				,		
Xylenes, Total	ND	µg/L	2.0						
1,2,4-Trimethylbenzene	ND	µg/L	1.0						
1,3,5-Trimethylbenzene	ND	µg/L	1.0						
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R22620	Analysis	Date:	2/28/2007 2:31:28 AN
Methyl tert-butyl ether (MTBE)	20.25	µg/L	2.5	101	51.2	138			
Benzene	21.06	µg/L	1.0	105	85.9	113			
Toluene	20.87	µg/L	1.0	104	86.4	113			
Ethylbenzene	21.02	µg/L	1.0	105	83.5	118			
Xylenes, Total	64.49	µg/L	2.0	107	83.4	122			
Sample ID: 100NG BTEX LCS	<b>;</b>	LCS			Batch	n ID: R22643	Analysis	Date:	3/1/2007 4:25:10 AN
Methyl tert-butyl ether (MTBF)	19.44	ua/L	2.5	97.2	51.2	138			
Benzene	19.50	µa/L	1.0	97.5	85.9	113	,		
Toluene	20.10	µg/L	1.0	100	86.4	113			
Ethylbenzene	19.74	μg/L	1.0	98.7	83.5	118	:		
Xylenes, Total	60.40	μg/L	2.0	101	83.4	122			
Qualifiers: E Value above quantitation	ange		H	Holdin D Not De	g times for prep	paration or analy	sis exceeded		

Analyte detected below quantitation limits J R

RPD outside accepted recovery limits

Spike recovery outside accepted recovery limits

9/11

S

Page 2

0702319

Work Order:

## QA/QC SUMMARY REPORT



San Juan Refining

River Terrace - 1st Quarter 2007

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RPI	DLimit Qual
Method: SW8021								
Sample ID: 400NG BTEX LCS		LCS			Batch	ID: <b>R22663</b>	Analysis Date:	3/1/2007 6:29:17 PM
Methyl tert-butyl ether (MTBE)	19.97	μg/L	2.5	99.8	51.2	138		
Benzene	20.54	µg/L	1.0	103	85.9	113		
Toluene	20.39	µg/L	1.0	102	86.4	113		
Ethylbenzene	20.63	µg/L	1.0	103	83.5	118	•	
Xylenes, Total	63.04	µg/L	2.0	105	83.4	122		
Sample ID: 100NG BTEX LCS-II		LCS			Batch	ID: <b>R22664</b>	Analysis Date:	3/2/2007 2:37:53 AM
Methyl tert-butyl ether (MTBE)	19.85	µg/L	2.5	99.2	51.2	138		
Benzene	20.24	µg/L	1.0	101	85.9	113		
Toluene	20.31	µg/L	1.0	102	86.4	113		
Ethylbenzene	20.41	µg/L	1.0	102	83.5	118		
Xylenes, Total	62.18	μg/L	2.0	104	83.4	122		
1,2,4-Trimethylbenzene	20.48	µg/L	1.0	102	83.5	115		
1,3,5-Trimethylbenzene	20.34	µg/L	1.0	102	85.2	113		
Sample ID: 0702319-07A MS		MS			Batch	ID: R22620	Analysis Date:	2/28/2007 1:31:29 AM
Methyl tert-butyl ether (MTBE)	21.12	µg/L	2.5	97.2	51.2	138		
Benzene	20.08	μg/L	1.0	<b>10</b> 0	85.9	113		
Toluene	19.81	µg/L	1.0	99.0	86.4	113		
Ethylbenzene	19.91	µg/L	1.0	99.6	83.5	118		
Venes, Total	60.90	µg/L	2.0	99.8	83.4	122		

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Samı	ole Receipt Ch	necklist		
Client Name SJR		Date and Tim	e Received:	2/27/2007
Nork Order Number 0702319		Received b	y TLS	
Checklist completed by Signature	Jelos Date	5.07		
Matrix Carrier nan	ne <u>UPS</u>			
Shipping container/cooler in good condition?	Yes .	No 🗔	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes	No	N/A	
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 🗌	•	
Water - VOA vials have zero headspace? No VOA vials s	submitted	Yes 🗹	No 🗌	
Water - Preservation labels on bottle and cap match?	Yes	No 🗔	N/A	· .
Water - pH acceptable upon receipt?	Yes 🗌	No	N/A 🗹	·
Container/Temp Blank temperature?	<b>4</b> °	4° C ± 2 Accep	otable	
COMMENTS:		If given sufficie	ent time to cool.	
			-	
Client contacted Date contacted:		P	erson contacted	
Contacted by: Regarding				
Comments:				
	······································		р Т	
			i i i	
Corrective Action				
			i ,	
· · · · ·				· · · · · · · · · · · · · · · · · · ·

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HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albunuenue, New Mexico 87109	Tel. 505, 345, 3975 Fax 505, 345, 4107 www.hallenvironmental.com			or N)	,⊳Oq , 08) 2'		1 4 00 08 bor 20 10 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	(Meth (Meth ) (PNA ) (PNA ) (F( ) (F( ) ) (Sen ) ) (Sen ) ) (Sen	EDB 1 EDC 0 B310 B310 B08 B08 B260 B280 B280 B280 B280 B280 B280 B280 B28											
QA / GC Package. Std 🔲 Level 4 🛄 Other:	Project Name:	NY 1 UN ale	(Å)	Project Manager:	Civility Hutedo	Summer/ Ado/Bob/ Kick on TE E	Sample Temperature:	Preservative + M + + M		4-10A X X X	Z Z X	3 X X		XXXXX	X X a					Received By: (Signature) 2/27/07 Remarks:
CHAIN-OF-CUSTODY RECORD	Client: Jow Juan De From	Address: # <>> Dol u G a n	Bloom Fold AM	074/3		Phone #: 535-632-416/	Fax#: 575-622.3911		Uate lime Matrix Sample I.U. No.	2-2/07 9400 H2U TP-8	INDA, I TES	1645 7-2-3	1345 TP-10	1/00m/	132 m	121-17 12-12			<	Date: Time: Relinduitshed By, Bignature)



#### COVER LETTER

Thursday, March 08, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace - 1st Quarter 2007

Dear Cindy Hurtado:

Order No.: 0702368

Hall Environmental Analysis Laboratory, Inc. received 6 sample(s) on 2/28/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE ESuite D ■ Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107 www.hallenvironmental.com

Date: 08-Mar-07

CLIENT:San Juan RefiningLab Order:0702368Project:River Terrace - 1st Quarter 2007

0702368-01

Lab ID:

Client Sample ID: TP-13 Collection Date: 2/27/2007 9:10:00 AM Date Received: 2/28/2007 Matrix: AQUEOUS

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	3/1/2007 4:50:22 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	3/1/2007 4:50:22 PM
Surr: DNOP	116	58-140	%REC	· 1 '	3/1/2007 4:50:22 PM
EPA METHOD 8015B: GASOLINE RANG	E				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	3/1/2007 11:37:46 PM
Surr: BFB	111	79.2-121	%REC	1	3/1/2007 11:37:46 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5	µg/L	1	3/1/2007 11:37:46 PM
Benzene	ND	1.0	µg/L	1	3/1/2007 11:37:46 PM
Toluene	ND	1.0	µg/L	1	3/1/2007 11:37:46 PM
Ethylbenzene	ND	1.0	µg/L	1.	3/1/2007 11:37:46 PM
Xylenes, Total	ND	2.0	µg/L	1	3/1/2007 11:37:46 PM
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1	3/1/2007 11:37:46 PM
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1	3/1/2007 11:37:46 PM
Surr: 4-Bromofluorobenzene	92.6	70.2-105	%REC	1	3/1/2007 11:37:46 PM

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

1

B Analyte detected in the associated Method Blank

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



CLIENT:	San Juan Refining	Client Sample ID:	TP-11
Lab Order:	0702368	<b>Collection Date:</b>	2/27/2007 9:40:00 AM
Project:	River Terrace - 1st Quarter 2007	Date Received:	2/28/2007
Lab ID:	0702368-02	Matrix:	AQUEOUS
Analyses	Result	POL Qual Units	DF Date Analyzed

		- 2- 2		21	Dute maryzeu
EPA METHOD 8015B: DIESEL RANGE	· · · · · · · · · · · · · · · · · · ·				Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	3/1/2007 5:24:47 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	3/1/2007 5:24:47 PM
Surr: DNOP	116	58-140	%REC	1	3/1/2007 5:24:47 PM
EPA METHOD 8015B: GASOLINE RAM	IGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	3/2/2007 12:07:53 AM
Surr: BFB	111	79.2-121	%REC	1	3/2/2007 12:07:53 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5	µg/L	1	3/2/2007 12:07:53 AM
Benzene	ND	1.0	µg/L	1	3/2/2007 12:07:53 AM
Toluene	ND	1.0	µg/L	1	3/2/2007 12:07:53 AM
Ethylbenzene	ND	1.0	µg/L	1	3/2/2007 12:07:53 AM
Xylenes, Total	ND	2.0	μg/L	1	3/2/2007 12:07:53 AM
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1	3/2/2007 12:07:53 AM
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1	3/2/2007 12:07:53 AM
Surr: 4-Bromofluorobenzene	92.2	70.2-105	%REC	1	3/2/2007 12:07:53 AM



Qualifiers:

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Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - <sup>its</sup> 2/9
- B Analyte detected in the associated Method Blank

Date: 08-Mar-07

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



**CLIENT:** San Juan Refining Lab Order: 0702368 **Project:** River Terrace - 1st Quarter 2007

Lab ID:

Qualifiers:

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J

ND

S

0702368-03

Date: 08-Mar-07

Client Sample ID: TP-3 Collection Date: 2/27/2007 10:05:00 AM **Date Received:** 2/28/2007 Matrix: AQUEOUS

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	3/1/2007 5:59:14 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	3/1/2007 5:59:14 PM
Surr: DNOP	102	58-140	%REC	1	3/1/2007 5:59:14 PM
EPA METHOD 8015B: GASOLINE RAM	IGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	3/2/2007 12:37:57 AM
Surr: BFB	113	79.2-121	%REC	1	3/2/2007 12:37:57 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5	μg/L	1	3/2/2007 12:37:57 AM
Benzene	ND	1.0	µg/L	1	3/2/2007 12:37:57 AM
Toluene	ND	1.0	μg/L	1	3/2/2007 12:37:57 AM
Ethylbenzene	ND	1.0	µg/L	1	3/2/2007 12:37:57 AM
Xylenes, Total	ND	2.0	µg/L	1	3/2/2007 12:37:57 AM
1,2,4-Trimethylbenzene	ND	1.0	µg/L	1	3/2/2007 12:37:57 AM
1,3,5-Trimethylbenzene	ND	1.0	hð\r	1.	3/2/2007 12:37:57 AM
Surr: 4-Bromofluorobenzene	94.8	70.2-105	%REC	1	3/2/2007 12:37:57 AM

Analyte detected in the associated Method Blank В

Н Holding times for preparation or analysis exceeded

- MCL Maximum Contaminant Level
- RL Reporting Limit
- 3/9

Value exceeds Maximum Contaminant Level

Analyte detected below quantitation limits

Spike recovery outside accepted recovery limits

Value above quantitation range

Not Detected at the Reporting Limit

Page 3 of 6



CLIENT:	San Juan Refining			Cl	ient Sample ID:	TP-10	)	
Lab Order:	Lab Order: 0702368			(	<b>Collection Date:</b>	2/27/2007 10:35:00 AM		
Project:	River Terrace - 1st Qu	arter 2007			Date Received:	2/28/2	2007	
Lab ID: 0702368-04					Matrix:	AQUEOUS		
Analyses	· · ·	Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC	
Diesel Range (	Drganics (DRO)	ND	1.0		mg/L	1	3/1/2007 6:33:18 PM	
Motor Oil Range Organics (MRO)		ND	5.0		mg/L	1	3/1/2007 6:33:18 PM	
Surr: DNOP		112	58-140		%REC	1	3/1/2007 6:33:18 PM	
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB	
Gasoline Rang	e Organics (GRO)	ND	0.050		mg/L	1	3/2/2007 1:07:48 AM	
Surr: BFB		111	79.2-121		%REC	1	3/2/2007 1:07:48 AM	
EPA METHOD	8021B: VOLATILES						Analyst: NSB	
Methyl tert-but	yl ether (MTBE)	ND	2.5		µg/L	1	3/2/2007 1:07:48 AM	
Benzene		ND	1.0		µg/L	1	3/2/2007 1:07:48 AM	
Toluene		ND	1.0		µg/L	1	3/2/2007 1:07:48 AM	
Ethylbenzene		ND	1.0		µg/L	1	3/2/2007 1:07:48 AM	
Xylenes, Total		ND	2.0		µg/L	1	3/2/2007 1:07:48 AM	
1,2,4-Trimethy	lbenzene	ND	1.0		µg/L	1	3/2/2007 1:07:48 AM	
1,3,5-Trimethy	Ibenzene	ND	1.0		µg/L	1	3/2/2007 1:07:48 AM	
Surr: 4-Bron	nofluorobenzene	92.2	70.2-105	,	%REC	1	3/2/2007 1:07:48 AM	

Date: 08-Mar-07

Qualifiers:

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Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

<sup>its</sup> 4/9

CLIENT:	San Juan Refining			Client Sample	<b>ID:</b> MW #	49
Lab Order:	0702368			Collection D	ate: 2/27/2	2007 12:50:00 PM
Project:	River Terrace - 1st Qu	arter 2007		Date Recei	ved: 2/28/2	2007
Lab ID:	0702368-05			Ma	trix: AQUI	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE				······	Analyst: SCC
Diesel Range C	Organics (DRO)	ND	1.0	mg/L	1	3/1/2007 7:41:31 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	3/1/2007 7:41:31 PM
Surr: DNOP		109	58-140	%REC	1	3/1/2007 7:41:31 PM
EPA METHOD	8015B: GASOLINE RAN	GE			;	Analyst: <b>NS</b> B
Gasoline Range	e Organics (GRO)	0.054	0.050	mg/L	1	3/2/2007 1:37:54 AM
Surr: BFB		113	79.2-121	%REC	1	3/2/2007 1:37:54 AM
EPA METHOD	8021B: VOLATILES				÷ . :	Analyst: <b>NSB</b>
Methyl tert-buty	vl ether (MTBE)	ND	2.5	µg/L	1	3/2/2007 1:37:54 AM
Benzene		ND	1.0	µg/L	1	3/2/2007 1:37:54 AM
Toluene		ND	1.0	µg/L	1	3/2/2007 1:37:54 AM
Ethylbenzene		ND	1.0	µg/L	1	3/2/2007 1:37:54 AM
Xylenes, Total		ND	2.0	µg/L	1	3/2/2007 1:37:54 AM
1,2,4-Trimethy	lbenzene	ND	1.0	hð\r	1	3/2/2007 1:37:54 AM
1,3,5-Trimethy	lbenzene	ND	1.0	µg/L	1	3/2/2007 1:37:54 AM
Surr: 4-Bron	nofluorobenzene	91.6	70.2-105	%REC	1	3/2/2007 1:37:54 AM
EPA 6010B: T	OTAL RECOVERABLE N	IETALS			,	Analyst: NMC
Chromium		ND	0.0060	mg/L	1	3/7/2007 11:14:58 AM
Lead		ND	0.0050	mg/L	1	3/7/2007 11:14:58 AM

Date: 08-Mar-07

Qualifiers:	*	Value exceeds Maximum Contaminant Level		В	Analyte detected in the	associated Method Blank	ζ.
	Е	Value above quantitation range		Н	Holding times for prep	paration or analysis exceeded	
	J	Analyte detected below quantitation limits		MCL	Maximum Contaminar	t Level	
	ND Not Detected at the Reporting Limit			RL	Reporting Limit	. D.	
	S	Spike recovery outside accepted recovery limits	5/9				ige 5 of 6

CLIENT:	San Juan Refining			Client Sa	mple ID:	DW #	1		
Lab Order:	0702368	0702368 Collection Date					2/27/2007 1:45:00 PM		
Project:	River Terrace - 1st Qua	rter 2007		Date R	eceived:	2/28/2	007		
Lab ID:	0702368-06				Matrix:	AQUI	EOUS		
Analyses		Result	PQL	Qual Units		DF	Date Analyzed		
EPA METHOD 80	15B: DIESEL RANGE						Analyst: SCC		
Diesel Range Org	anics (DRO)	ND	1.0	mg/L		1	3/1/2007 8:15:35 PM		
Motor Oil Range	Organics (MRO)	ND	5.0	mg/L		1	3/1/2007 8:15:35 PM		
Surr: DNOP		111	58-140	%REC		1	3/1/2007 8:15:35 PM		
EPA METHOD 80	E					Analyst: NSB			
Gasoline Range (	Drganics (GRO)	0.29	0.050	mg/L		1	3/2/2007 4:08:00 AM		
Surr: BFB		114	79.2-121	%REC		1	3/2/2007 4:08:00 AM		
EPA METHOD 80	21B: VOLATILES						Analyst: NSB		
Methyl tert-butyl e	ether (MTBE)	ND	2.5	µg/L		1	3/2/2007 4:08:00 AM		
Benzene		ND	1.0	µg/∟		1	3/2/2007 4:08:00 AM		
Toluene		ND	1.0	μg/L		1	3/2/2007 4:08:00 AM		
Ethylbenzene		ND	1.0	µg/L		1	3/2/2007 4:08:00 AM		
Xylenes, Total		8.3	2.0	µg/L		1	3/2/2007 4:08:00 AM		
1,2,4-Trimethylbe	nzene	52	1.0	µg/L		1	3/2/2007 4:08:00 AM		
1,3,5-Trimethylbe	nzene	ND	1.0	µg/L		1	3/2/2007 4:08:00 AM		
Surr: 4-Bromof	luorobenzene	93.2	70.2-105	%REC		1	3/2/2007 4:08:00 AM		
EPA METHOD 7	470: MERCURY	,					Analyst: CMS		
Mercury		0.0015	0.00020	mg/L		1	3/2/2007		
EPA 6010B: TO	AL RECOVERABLE ME	TALS					Analyst: NMO		
Chromium		ND	0.0060	mg/L		1	3/7/2007 11:16:40 AM		
Lead		ND	0.0050	mg/L		1	3/7/2007 11:16:40 AM		

Date: 08-Mar-07

Qualifiers:

\* Value exceeds Maximum Contaminant Level

E Value above quantitation range J

Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- 619
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н

MCL Maximum Contaminant Level

RL Reporting Limit



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## **QA/QC SUMMARY REPORT**

Client: San Juan Refi Project: River Terrace	ining - 1st Ouarte	er 2007					Work	07022
Analyte	Result	Units	PQL	%Rec	LowLimit Hi	ighLimit	%RPD RPDL	.imit Qual
Method: SW8015		<b></b> · · · · · · · · · · · · · · · · · ·					1	
Sample ID: MB-12410		MBLK			Batch ID:	12410	Analvsis Date:	3/1/2007 1:58:25 PM
Diesel Range Organics (DRO)	ND	ma/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0				·	
Sample ID: LCS-12410		LCS			Batch ID:	12410	Analysis Date:	3/1/2007 2:32:49 PM
Diesel Range Organics (DRO)	5.603	mg/L	1.0	112	74	157		
Sample ID: LCSD-12410		LCSD			Batch ID:	12410	Analysis Date:	3/1/2007 3:07:09 PM
Diesel Range Organics (DRO)	5.623	mg/L	1.0	112	74	157	0.362 23	
Method: SW8015								
Sample ID: 0702368-02A MSD		MSD			Batch ID:	R22664	Analysis Date:	3/2/2007 6:08:04 AM
Gasoline Range Organics (GRO)	0.4970	mg/L	0.050	99.4	80	115	1.17 8.39	)
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R22664	Analysis Date:	3/1/2007 7:58:58 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R22664	Analysis Date:	3/2/2007 6:37:59 AM
Gasoline Range Organics (GRO)	0.5380	mg/L	0.050	108	80	115	1	
Sample ID: 0702368-02A MS	1. A.	MS			Batch ID:	R22664	Analysis Date:	3/2/2007 5:38:03 AM
Gasoline Range Organics (GRO)	0.4912	mg/L	0.050	98.2	80	115	· ·	
Method: SW8021			•					_
Sample ID: RB-II		MBLK			Batch ID:	R22664	Analysis Date:	3/2/2007 2:07:52
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5					
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
1,2,4-1 rimethylbenzene		µg/L	1.0					
Sample ID: 100NG BTEX I CS-II	ND .	µy/⊂ LCS	1.0		Batch ID	R22664	Analysis Date	3/2/2007 2:37:53 AM
Motbyl tort bubl other (MTRE)	10.85	200	. 25	00.2	51.2	139	i analysis bute.	0/2/2007 2.07.007 117
Benzene	20.24	μg/τ. μα/Ι	2.0	99.2 101	85.9	113		
Toluene	20.24	μg/L	1.0	102	86.4	113	1	
Ethylbenzene	20.41	на/L	1.0	102	83.5	118		
Xvienes, Total	62.18	ua/L	2.0	104	83.4	122		
1,2,4-Trimethylbenzene	20.48	µg/L	1.0	102	83.5	115		
1,3,5-Trimethylbenzene	20.34	μg/L	1.0	102	85.2	113		
Method: SW7470							.'	
Sample ID: LCS-12426		LCS			Batch ID	12426	Analysis Date:	3/2/2007
Mercury	0.005014	mg/L	0.00020	100	80	120		
			•				1 1 2	
							∎ E	

Qualifiers: Н E Value above quantitation range . J ND

Analyte detected below quantitation limits

R RPD outside accepted recovery limits Holding times for preparation or analysis exceeded

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Not Detected at the Reporting Limit

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7/9 recovery outside accepted recovery limits

Page 1

## **QA/QC SUMMARY REPORT**

Client: roject:	San Juan Refining River Terrace - 1st Qu	arter 2007					W	ork Order:	0702368
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit (	Qual
Method: SW6010 Sample ID: MB-124	IA 415	MBLK			Batch	ID: <b>12415</b>	Analysis Da	ite: 3/7/200	7 11:09:22 AM
Chromium Lead Sample ID: LCS-12	ND ND 2415	mg/L mg/L LCS	0.0060 0.0050		Batch	ID: <b>12415</b>	Analysis Da	ate: 3/7/200	7 11:10:57 AM
Chromium Lead	0.5043 0.4878	mg/L mg/L	0.0060 0.0050	101 97.6	80 80	120 120			

ualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

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ND

S

 $\frac{2.99}{8\,/\,9}$  recovery outside accepted recovery limits

Page 2

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Hall Environmental Analysis Laboratory, I	Inc

	лу, mc.	boolding		
Client Name SJR	Sample Receipt C	Date and Tin	ne Received	2/28/2007
Work Order Number 0702368		Received h		
	_	1.000.1001		<b>X</b>
	Jeb.	28,87		÷
Joignalure 8	Date	2		
Matrix (	Carrier name <u>UPS</u>			
Shipping container/cooler in good condition?	Yes 🗹	No	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🔽	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes	No	N/A	····
Chain of custody present?	Yes 🔽	No		
Chain of custody signed when relinquished and receive	d? 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 🗋		
Water - VOA vials have zero headspace? No N	/OA vials submitted	Yes 🗹	No	
Water - Preservation labels on bottle and cap match?	Yes 🔽	No 🗌	N/A	
Water - pH acceptable upon receipt?	Yes 🔽	No 🗌	N/A   🗆	
Container/Temp Blank temperature?	3°	4° C ± 2 Acce	ptable	
COMMENTS:		n given sumer		
Client contacted Date of	contacted:	P	erson contacted	·
Contacted by: Regard	rding		,   	
Comments:				
			·	
			J	
Corrective Action		·		
			<u> </u>	
		•		

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505: 345. 3975 Fax 505. 345. 4107 www.hallenvironmental.com	(1508) s (8071)         (7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7       7	Remarks:
Dther: Project Name: Project #: Project #:	Project Manager: Project Manager: Sample Temperature: Sample Temperature: Preservative Humber/Volume Hur 10 A Vumber/Volume Hur 10 A V 10 A Vumber/Volume Hur 10 A V 10 A Vumber/Volume Hur 10 A Vumber/Volume Hur 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10 A V 10	Received By: (Signature) 2128 167 (Regeived By: (Signature)
CHAIN-OF-CUSTODY RECORD Client: San Juan Kofung Address: H50 R1 4990	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Dete: Time: Relinquished By: (Sighature) NATID A37 Min Relinquished By: (Signature) Date: Time: Relinquished By: (Signature)

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#### COVER LETTER

Thursday, July 05, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace 2nd Qtr 2007-Water

Dear Cindy Hurtado:

Order No.: 0706320

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 6/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Hall Envir	ronmental Analysi	: 05	<i>Tul-07</i>				
CLIENT:San Juan RefiningLab Order:0706320Project:River Terrace 2nd QtrLab ID:0706320-01		2007-Water		Client Sample ID Collection Date Date Received	: TP ; : 6/20 : 6/21	#7 0/2007 8:20:00 AM 1/2007 0/UEOUS	
				Matrix	: AQ		
Analyses		Result	PQL	Qual Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC	
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	. 1 .	6/27/2007 4:41:42 PM	
Motor Oil Range Organics (MRO)		ND	5.0	mg/L	1	6/27/2007 4:41:42 PM	
Surr: DNOP		109	58-140	%REC	1	6/27/2007 4:41:42 PM	
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB	
Gasoline Range Organics (GRO)		0.052	0.050	mg/L	1	7/1/2007 2:47:15 AM	
Surr: BFB		106	79.2-121	%REC	1	7/1/2007 2:47:15 AM	
EPA METHOD	8021B: VOLATILES					Analyst: NSB	
Methyl tert-but	tyl ether (MTBE)	ND	2.5	µg/L	1	7/1/2007 2:47:15 AM	
Benzene		ND	1.0	µg/L	1	7/1/2007 2:47:15 AM	
Toluene		ND	1.0	µg/L	1	7/1/2007 2:47:15 AM	
Ethylbenzene		ND	1.0	µg/L	1	7/1/2007 2:47:15 AM	
Xylenes, Total		ND	2.0	μg/L	1	7/1/2007 2:47:15 AM	
Surr: 4-Broi	mofluorobenzene	89.6	70.2-105	%REC	1	7/1/2007 2:47:15 AM	
EPA 6010B: 1	TOTAL RECOVERABLE M	IETALS				Analyst: CMS	
Barium		0.075	0.020	mg/L	1	7/3/2007 3:43:49 PM	
Chromium		ND	0.0060	mg/L	1	7/3/2007 3:43:49 PM	
Lead		ND	0.0050	mg/L	1	7/3/2007 3:43:49 PM	

Qualifiers:

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ND

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В Analyte detected in the associated Method Blank

- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

1/4

Value exceeds Maximum Contaminant Level

Analyte detected below quantitation limits

Spike recovery outside accepted recovery limits

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Not Detected at the Reporting Limit

Value above quantitation range

Page 1 of 2

1

CLIENT:	San Juan Refining			Client Samp	le ID: DW #1					
Lab Order:	0706320			Collection	Collection Date: Date Received:		6/20/2007 8:45:00 AM			
Project:	River Terrace 2nd Qtr	2007-Water		Date Rec			2007			
Lab ID: 0706320-02				N	latrix:	AQUEOUS				
Analyses		Result	PQL	Qual Units		DF	Date Analyzed			
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC			
Diesel Range (	Organics (DRO)	ND	1.0	mg/L		1	6/27/2007 5:17:03 PM			
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L		1	6/27/2007 5:17:03 PM			
Surr: DNOP		116	58-140	%REC		1	6/27/2007 5:17:03 PM			
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB			
Gasoline Rang	e Organics (GRO)	0.15	0.050	mg/L		1	7/1/2007 3:17:17 AM			
Surr: BFB		107	79.2-121	%REC		1	7/1/2007 3:17:17 AM			
EPA METHOD	8021B: VOLATILES						Analyst: NSB			
Methyl tert-buty	yl ether (MTBE)	ND	2.5	µg/L	· · ·	1	7/1/2007 3:17:17 AM			
Benzene		ND	1.0	µg/L		1	7/1/2007 3:17:17 AM			
Toluene		ND	1.0	μg/L		1	7/1/2007 3:17:17 AM			
Ethylbenzene		ND	1.0	µg/L		1	7/1/2007 3:17:17 AM			
Xylenes, Total		2.6	2.0	µg/L		1	7/1/2007 3:17:17 AM			
Surr: 4-Brom	nofluorobenzene	91.9	70.2-105	%REC		1	7/1/2007 3:17:17 AM			
EPA METHOD	7470: MERCURY						Analyst: IC			
Mercury		ND	0.00020	mg/L		1	6/28/2007 9:42:30 PM			
EPA 6010B: T	OTAL RECOVERABLE M	IETALS					Analyst: CMS			
Barium		0.93	0.10	mg/L		1	7/3/2007 3:47:56 PM			
Chromium		ND	0.030	mg/L		1	7/3/2007 3:47:56 PM			
Lead		ND	0.025	mg/L		1	7/3/2007 3:47:56 PM			

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Date: 05-Jul-07

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Qualifiers:	ifiers: * Value exceeds Maximum Contaminant Level		B Analyte detected in the associated Method Bla						
	E	Value above quantitation range	Н	Holding times for preparation or analysis exceeded					
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level					
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit	~	c			

S . Spike recovery outside accepted recovery limits

2/4 ·

## **QA/QC SUMMARY REPORT**

Client: San Juan Refining Project: River Terrace 2nd Qtr 2007-Water							Work Order: 070632		
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RPI	DLimit Qual	
Method: SW8015									
Sample ID: MB-13262		MBLK			Batch II	D: <b>13262</b>	Analysis Date:	6/27/2007 1:10:07 PM	
Diesel Range Organics (DRO)	ND	mg/L	1.0				1	•	
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-13262		LCS			Batch I	D: <b>13262</b>	Analysis Date:	6/27/2007 1:45:10 PM	
Diesel Range Organics (DRO)	5.722	mg/L	1.0	114	74	157			
Sample ID: LCSD-13262		LCSD	•		Batch I	D: 13262	Analysis Date:	6/27/2007 2:20:34 PM	
Diesel Range Organics (DRO)	5.745	mg/L	1.0	115	74	157	0.392 2	3	
Method: SW8015									
Sample ID: 5ML REAGENT BLA		MBLK			Batch I	D: <b>R24198</b>	Analysis Date:	6/30/2007 6:59:05 PM	
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Sample ID: 2.5UG GRO LCS		LCS			Batch I	D: <b>R24198</b>	Analysis Date:	6/30/2007 11:14:32 PM	
Gasoline Range Organics (GRO)	0.5044	mg/L	0.050	101	80	115			
Method: SW8021									
Sample ID: 5ML REAGENT BLA		MBLK			Batch I	D: <b>R24198</b>	Analysis Date:	6/30/2007 6:59:05 PM	
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	µg/L	1.0						
Toluene	ND	hð\r	1.0				l.		
Ethylbenzene	ND	µg/L	1.0					-	
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: <b>R24198</b>	Analysis Date:	6/30/2007 11:44:25	
Methyl tert-butyl ether (MTBE)	18.69	µg/L	2.5	93.5	51.2	138		· · ·	
Benzene	19.42	µg/L	1.0	97.1	85.9	113			
Toluene	19.80	µg/L	1.0	99.0	86.4	113	1		
Ethylbenzene	20.03	µg/L	1.0	100	83.5	118			
Xylenes, Total	59.67	hð\r	2.0	99.4	83.4	122	<u></u>		
Method: SW7470							· [		
Sample ID: MB-13285		MBLK			Batch	ID: 13285	Analysis Date:	6/28/2007 8:57:40 PM	
Mercury	ND	mg/L	0.00020						
Sample ID: LCS-13285	· · ·	LCS			Batch	ID: 13285	Analysis Date:	6/28/2007 8:59:24 PM	
Mercury	0.004858	mg/L	0.00020	97.2	80	120			
Method: SW6010A									
Sample ID: MB-13241		MBLK			Batch	1D: <b>13241</b>	Analysis Date:	7/3/2007 2:42:57 PM	
Barium	ND	mg/L	0.020						
Chromium	ND	mg/L	0.0060						
Lead	ND	mg/L	0.0050						
Sample ID: LCS-13241		LCS			Batch	ID: <b>13241</b>	Analysis Date:	7/3/2007 2:36:54 PM	
Barium	0.5090	mg/∟	0.020	102	80	120			
Chromium	0.5194	mg/L	0.0060	104	80	120			
Lead	0.5088	mg/L	0.0050	102	80	120		· • .	
							· .		
								4 - <b>4</b> - <b>4</b>	

#### Qualifiers:

'E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Page 1

	Sample Rece	eipt Ch	necklist		
lient Name SJR			Date and Time	Received:	6/21/2007
Work Order Number 0706320	1		Received by	TLS	
Checklist completed by	Jon	( Date	6[21]0	7	
Matrix Ca	rrier name <u>UPS</u>	!			
Shipping container/cooler in good condition?	Yes			Not Present	
Custody seals intact on shipping container/cooler?	Yes		No []	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes		No 🗹	N/A	
Chain of custody present?	Yes	$\checkmark$	No 🗔		
Chain of custody signed when relinquished and received?	Yes		No 🗌		
Chain of custody agrees with sample labels?	Yes	$\checkmark$	No 🗌		
Samples in proper container/bottle?	Yes		No 🗌		
Sample containers intact?	Yes	$\checkmark$	No 🗌		
Sufficient sample volume for indicated test?	Yes		No		
All samples received within holding time?	Yes	$\checkmark$	No		
Water - VOA vials have zero headspace? No VC	OA vials submitted		Yes 🔽	No 🗔	
Nater - Preservation labels on bottle and cap match?	Yes		No 🗌	N/A	
Water - pH acceptable upon receipt?	Yes	$\checkmark$	No 🗌	N/A	
Container/Temp Blank temperature?		6°	4° C ± 2 Accepta	ble	
COMMENTS:			If given sufficient	time to cool.	
			· ··· ···· ···· ···· ····		
				,	
Client contacted Date co	ntacted:		Pers	son contacted	
Contacted by: Regardi	ing				
			1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -		
Comments:					· · · · · · · · · · · · · · · · · · ·
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Corrective Action	······				
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#### COVER LETTER

Thursday, July 05, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace 2nd Qtr 2007-Water

Dear Cindy Hurtado:

Order No.: 0706281

Hall Environmental Analysis Laboratory, Inc. received 12 sample(s) on 6/20/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Date: 05-Jul-07

CLIENT:	San Juan Refining		С	lient Sample ID:	MW	#49
Lab Order:	0706281			Collection Date:	6/18/	2007 10:25:00 AM
Project:	River Terrace 2nd Qtr	2007-Water		Date Received:	6/20/2007	
Lab ID:	0706281-01			Matrix:	AQU	EOUS
Analyses		Result	PQL Qual	Units	DF	Date Analyzed
EPA METHOD 80	15B: DIESEL RANGE			<sup>**</sup>		Analyst: SCC
Diesel Range Org	janics (DRO)	ND	1.0	mg/L	1	6/21/2007 3:23:46 PM
Motor Oil Range	Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 3:23:46 PM
Surr: DNOP		112	58-140	%REC	1	6/21/2007 3:23:46 PM
EPA METHOD 8	015B: GASOLINE RANG	θE				Analyst: <b>NSB</b>
Gasoline Range (	Organics (GRO)	ND	0.050	mg/L	1	6/27/2007 7:27:46 PM
Surr: BFB		94.6	79.2-121	%REC	1	6/27/2007 7:27:46 PM
EPA METHOD 8	021B: VOLATILES					Analyst: NSB
Methyl tert-butyl	ether (MTBE)	ND	2.5	µg/L	1	6/27/2007 7:27:46 PM
Benzene	× ,	ND	1.0	µg/L	1	6/27/2007 7:27:46 PM
Toluene		ND	1.0	µg/L	1	6/27/2007 7:27:46 PM
Ethylbenzene		ND	1.0	µg/L	1	6/27/2007 7:27:46 PM
Xylenes, Total		ND	2.0	µg/L	1	6/27/2007 7:27:46 PM
Surr: 4-Bromo	fluorobenzene	86.4	70.2-105	%REC	1	6/27/2007 7:27:46 PM
EPA 6010B: TO	TAL RECOVERABLE M	ETALS				Analyst: CMS
Barium		0.064	0.020	mg/L	1	7/3/2007 2:59:00 PM
Chromium	· · · · · · · · · · · · · · · · · · ·	ND	0.0060	mg/L	1	7/3/2007 2:59:00 PM
Lead		ND	0.0050	mg/L	1	7/3/2007 2:59:00 PM

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits S
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 12

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706281 River Terrace 2nd Qtr 0706281-04		Client Sample ID Collection Date Date Received Matrix	: TP-#6 : 6/18/2 : 6/20/2 : AQU	TP-#6 6/18/2007 1:30:00 PM 6/20/2007 AQUEOUS		
Analyses		Result	PQL	Qual Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC	
Diesel Range C	Organics (DRO)	ND	1.0	mg/L	1	6/21/2007 5:44:45 PM	
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 5:44:45 PM	
Surr: DNOP		110	58-140	%REC	1	6/21/2007 5:44:45 PM	
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB	
Gasoline Rang	e Organics (GRO)	0.11	0.050	mg/L	1	6/28/2007 2:33:13 AM	
Surr: BFB		99.9	79.2 <b>-1</b> 21	%REC	1	6/28/2007 2:33:13 AM	
EPA METHOD	8021B: VOLATILES					Analyst: NSB	
Methyl tert-buty	/I ether (MTBE)	ND	2.5	µg/L	1	6/28/2007 2:33:13 AM	
Benzene		ND	1.0	рдуг	1	6/28/2007 2:33:13 AM	
Toluene		ND	1.0	µg/L	1	6/28/2007 2:33:13 AM	
Ethylbenzene		ND	1.0	µg/L	1	6/28/2007 2:33:13 AM	
Xylenes, Total		ND	2.0	μg/L	1	6/28/2007 2:33:13 AM	
Surr: 4-Brom	nofluorobenzene	93.0	70.2-105	%REC	1	6/28/2007_2:33:13 AM	
EPA 6010B: T	OTAL RECOVERABLE M	ETALS				Analyst: CMS	
Barium		0.38	0.020	mg/L	1	7/3/2007 3:08:54 PM	
Chromium		ND	0.0060	mg/L	1	7/3/2007 3:08:54 PM	
Lead		0.027	0.0050	mg/L	1	7/3/2007 3:08:54 PM	

Date: 05-Jul-07

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E. Value above quantitation range
- j Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 4 of 12

CLIDNT	C h D. f			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		· · ·		
CLIENT:	San Juan Kerining			C	ient Sample ID:	IP-#	5	
Lab Order:	0706281				Collection Date:	6/18/	2007 1:50:00 PM	
Project:	River Terrace 2nd Qtr	2007-Water			Date Received:	6/20/2007		
Lab ID:	0706281-05				Matrix:	AQU	EOUS	
Analyses	· · · · · · · · · · · · · · · · · · ·	Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC	
Diesel Range (	Organics (DRO)	ND	1.0		mg/L	1	6/21/2007 6:20:05 PM	
Motor Oil Rang	ge Organics (MRO)	ND	5.0		mg/L	1	6/21/2007 6:20:05 PM	
Surr: DNOP		110	58-140		%REC	1	6/21/2007 6:20:05 PM	
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB	
Gasoline Rang	je Organics (GRO)	78	5.0		mg/L	100	6/28/2007 3:05:44 AM	
Surr: BFB		112	79.2-121		%REC	100	6/28/2007 3:05:44 AM	
EPA METHOD	8021B: VOLATILES						Analyst: <b>NS</b> B	
Methyl tert-bu	tyl ether (MTBE)	ND	250		µg/L	100	6/28/2007 3:05:44 AM	
Benzene		340	100		µg/L	100	6/28/2007 3:05:44 AM	
Toluene		ND	100		µg/L	100	6/28/2007 3:05:44 AM	
Ethylbenzene		3500	100		µg/L	100	6/28/2007 3:05:44 AM	
Xylenes, Tota		21000	1000		µg/L	500	6/28/2007 3:32:47 PM	
Surr: 4-Broi	mofluorobenzene	90.3	70.2-105		%REC	500	6/28/2007 3:32:47 PM	
EPA 6010B: 1	TOTAL RECOVERABLE M	IETALS					Analyst: CMS	
Barium		0.21	0.020		mg/L	1	7/3/2007 3:11:28 PM	
Chromium		ND	0.0060		mg/L	1	7/3/2007 3:11:28 PM	
Lead		0.092	0.0050		mg/L	1	7/3/2007 3:11:28 PM	

**Date:**  $05 - J_{\mu}^{\dagger} - 07$ 

Value exceeds Maximum Contaminant Level
 B Analyte detected in the associated Method Blank
 E Value above quantitation range
 H Holding times for preparation or analysis exceeded
 J Analyte detected below quantitation limits
 MCL Maximum Contaminant Level
 ND Not Detected at the Reporting Limit
 RL Reporting Limit

Not Detected at the Reporting Limit Spike recovery outside accepted recovery limits

Qualifiers:

S

Page 5 of 12

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CLIENT:	San Juan Refining			Client Sample ID	: TP-#2	
Lab Order:	0706281			Collection Date	: 6/18/2	2:20:00 PM
Project: River Terrace 2nd Qtr 2007-Wat				Date Received	: 6/20/2	.007
Lab ID:	0706281-06			Matrix	: AQUH	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8	015B: DIESEL RANGE			<u> </u>		Analyst: SCC
Diesel Range Or	ganics (DRO)	ND	1,0	mg/L	1	6/21/2007 6:55:03 PM
Motor Oil Range	Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 6:55:03 PM
Surr: DNOP		112	58-140	%REC	1	6/21/2007 6:55:03 PM
EPA METHOD 8	015B: GASOLINE RANG	GE				Analyst: NSB
Gasoline Range	Organics (GRO)	47	5.0	mg/L	100	6/28/2007 4:40:49 AM
Surr: BFB		106	79.2-121	%REC	100	6/28/2007 4:40:49 AM
EPA METHOD 8	021B: VOLATILES					Analyst: <b>NS</b> B
Methyl tert-butyl	ether (MTBE)	ND	250	µg/L	100	6/28/2007 4:40:49 AM
Benzene		1400	100	µg/L	100	6/28/2007 4:40:49 AM
Toluene		320	100	µg/L	100	6/28/2007 4:40:49 AM
Ethylbenzene		3800	100	μg/L	100	6/28/2007 4:40:49 AM
Xylenes, Total		15000	200	μg/L	100	6/28/2007 4:40:49 AM
Surr: 4-Bromo	fluorobenzene	100	70.2-105	%REC	100	6/28/2007 4:40:49 AM
EPA 6010B: TO	TAL RECOVERABLE M	ETALS				Analyst: CMS
Barium		0.29	0.020	mg/L	1	7/3/2007 3:13:55 PM
Chromium		ND	0.0060	mig/L	1	7/3/2007 3:13:55 PM
Lead		0.067	0.0050	mg/L	1	7/3/2007 3:13:55 PM

#### Hall Environmental Analysis Laboratory, Inc.

Date: 05-Jul-07

Qualifiers: \*

Е

Value exceeds Maximum Contaminant Level Value above quantitation range

Analyte detected below quantitation limits J

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

6/16

В Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 6 of 12

2

			·			
CLIENT: Lab Order:	San Juan Refining 0706281			Client Sample ID Collection Date	: TP-	#13 9/2007 10:40:00 AM
Project:	River Terrace 2nd Qt	r 2007-Water		Date Received	1: 6/20	)/2007
Lab ID:	0706281-07			Matrix	:: AQ	UEOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	6/21/2007 7:30:03 PM
Motor Oil Rang	ge Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 7:30:03 PM
Surr: DNOP		110	58-140	%REC	1	6/21/2007 7:30:03 PM
EPA METHOD	8015B: GASOLINE RAM	IGE				Analyst: NSB
Gasoline Rang	ge Organics (GRO)	ND	0.050	mg/L	1	6/27/2007 9:27:55 PM
Surr: BFB		94.7	79.2-121	%REC	1	6/27/2007 9:27:55 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-bul	tyl ether (MTBE)	ND	2.5	μg/L	1	6/27/2007 9:27:55 PM
Benzene		ND	1.0	µg/L	1	6/27/2007 9:27:55 PM
Toluene		ND	1.0	.µg/L	1	6/27/2007 9:27:55 PM
Ethylbenzene		ND	1.0	µg/L	1	6/27/2007 9:27:55 PM
Xylenes, Total	·	ND	2.0	µg/L	1	6/27/2007 9:27:55 PM
Surr: 4-Bron	mofluorobenzene	86.6	70.2-105	%REC	1	6/27/2007 9:27:55 PM
EPA 6010B: 1	TOTAL RECOVERABLE	METALS				Analyst: CMS
Barium		0.42	0.020	mg/L	1	7/3/2007 3:16:25 PM
Chromium		0.019	0.0060	mg/L	1	7/3/2007 3:16:25 PM
Lead		0.011	0.0050	mg/L	1	7/3/2007 3:16:25 PM
Lead		0.011	0.0050	mg/L	.1	//3/2007/3:16:25 P

Date: 05-Jul-07

\* Value exceeds Maximum Contaminant Level В Analyte detected in the associated Method Blank <sup>1</sup>Qualifiers: Holding times for preparation or analysis exceeded Е Н Value above quantitation range MCL Maximum Contaminant Level J Analyte detected below quantitation limits RL Reporting Limit ND Not Detected at the Reporting Limit Spike recovery outside accepted recovery limits S

Page 7 of 12

CLIENT:	San Juan Refining			Client Sample ID:			TP-#12		
Lab Order:	0706281			Collection I	Date:	6/19/2	6/19/2007 11:05:00 AM		
Project:	River Terrace 2nd Qtr	2007-Water		Date Recei	ived:	6/20/2007			
Lab ID:	0706281-08		Ma	Matrix:		EOUS			
Analyses	······································	Result	PQL	Qual Units		DF	Date Analyzed		
EPA METHOD 8	015B: DIESEL RANGE		· · · · · · · · ·				Analyst: SCC		
Diesel Range Or	ganics (DRO)	ND	1.0	mg/L		1	6/21/2007 8:04:58 PM		
Motor Oil Range	Organics (MRO)	ND	5.0	mg/L		1	6/21/2007 8:04:58 PM		
Surr: DNOP		108	58-140	%REC		1	6/21/2007 8:04:58 PM		
EPA METHOD 8	015B: GASOLINE RAN	GE					Analyst: <b>NSB</b>		
Gasoline Range	Organics (GRO)	ND	0.050	mg/L		1	6/28/2007 5:12:02 AM		
Surr: BFB		98.3	79.2-121	%REC		1	6/28/2007 5:12:02 AM		
EPA METHOD 8	3021B: VOLATILES						Analyst: <b>NSB</b>		
· Methyl tert-butyl	ether (MTBE)	2.9	2.5	µg/L		1	6/28/2007 4:02:46 PM		
Benzene		ND	1.0	µg/L		1	6/28/2007 4:02:46 PM		
Toluene		ND	1.0	µg/L		1	6/28/2007 4:02:46 PM		
Ethylbenzene		ND	1.0	µg/L		1	6/28/2007 4:02:46 PM		
Xylenes, Total		ND	2.0	µg/L		1	6/28/2007 4:02:46 PM		
Surr: 4-Bromo	ofluorobenzene	87.7	70.2-105	%REC		1	6/28/2007 4:02:46 PM		
EPA 6010B: TO	TAL RECOVERABLE M	ETALS					Analyst: CMS		
Barium		0.21	0.020	mg/L		1	7/3/2007 3:18:53 PM		
Chromium		0.0095	0.0060	mg/L		1	7/3/2007 3:18:53 PM		
Lead		0.016	0.0050	mg/L		1	7/3/2007 3:18:53 PM		

Qualifiers:

\* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL · Reporting Limit

8/16



Hall Environmental Analysis Laboratory, Inc.

Date: 05-Jul-07

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706281 River Terrace 2nd Qtr 0706281-09	2007-Water	C	Client Sample ID: Collection Date: Date Received: Matrix:	TP-# 6/19/ 6/20/ AQU	/11 /2007 11:30:00 AM /2007 JEOUS
Analyses		Result	PQL Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE		······································			Analyst: SCC
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	6/21/2007 8:39:58 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 8:39:58 PM
Surr: DNOP		112	58-140	%REC	1	6/21/2007 8:39:58 PM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	6/28/2007 5:42:04 AM
Surr: BFB		95.4	79.2-121	%REC	1	6/28/2007 5:42:04 AM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-but	yl ether (MTBE)	ND	2.5	μg/L	1	6/28/2007 4:32:44 PM
Benzene		ND	1.0	µg/L	1	6/28/2007 4:32:44 PM
Toluene		ND	1.0	µg/L	1	6/28/2007 4:32:44 PM
Ethylbenzene		ND	1.0	µg/L	1	6/28/2007 4:32:44 PM
Xylenes, Total		ND	2.0	µg/L	1	6/28/2007 4:32:44 PM
Surr: 4-Bron	nofluorobenzene	89.9	70.2-105	%REC	1	6/28/2007 4:32:44 PM
EPA 6010B: T	OTAL RECOVERABLE M	ETALS				Analyst: CMS
Barium		0.33	0.020	mg/L	1	7/3/2007 3:21:22 PM
Chromium		0.013	0.0060	mg/L	1	7/3/2007 3:21:22 PM
Lead		0.015	0.0050	mg/L	1	7/3/2007 3:21:22 PM

Date: 05-Jul-07

Value exceeds Maximum Contaminant LevelBAnalyte detected in the associated Method BlankValue above quantitation rangeHHolding times for preparation or analysis exceeded

- Value above quantitation range Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

\*

Е

J

Qualifiers:

RL Reporting Limit

MCL Maximum Contaminant Level

Page 9 of 12

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706281 River Terrace 2nd Qtr 0706281-10	2007-Water		Client Sample II Collection Date Date Received Matrix	: TP-#1 : 6/19/2 : 6/20/2 : AQU	TP-#10 6/19/2007 9:45:00 AM 6/20/2007 AQUEOUS	
Analyses		Result	PQL	Qual Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC	
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	6/21/2007 9:14:59 PM	
Motor Oil Rang	je Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 9:14:59 PM	
Surr: DNOP		110	58-140	%REC	1	6/21/2007 9:14:59 PM	
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB	
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	6/28/2007 6:12:01 AM	
Surr: BFB		94.2	79.2-121	%REC	1	6/28/2007 6:12:01 AM	
EPA METHOD	8021B: VOLATILES					Analyst: NSB	
Methyl tert-but	yl ether (MTBE)	ND	2.5	µg/L	1	6/28/2007 6:12:01 AM	
Benzene		ND	1.0	µg/L	1	6/28/2007 6:12:01 AM	
Toluene		ND	1.0	µg/L	1	6/28/2007 6:12:01 AM	
Ethylbenzene		ND	1.0	µg/L	1	6/28/2007 6:12:01 AM	
Xylenes, Total		ND	2.0	µg/L	1	6/28/2007 6:12:01 AM	
Surr: 4-Bron	nofluorobenzene	86.5	70.2-105	%REC	1	6/28/2007 6:12:01 AM	
EPA 6010B: T	OTAL RECOVERABLE M	ETALS				Analyst: CMS	
Barium		0.41	0.020	mg/L	1	7/3/2007 3:23:51 PM	
Chromium		0.024	0.0060	mg/L	1	7/3/2007 3:23:51 PM	
Lead		0.0089	0.0050	mg/L	1	7/3/2007 3:23:51 PM	

B Analyte detected in the associated Method Blank

Date: 05-Jul-07

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 10 of 12

Value exceeds Maximum Contaminant Level
 E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 10/16

Qualifiers:

**Date:** 05-Jul-07

CLIENT: Lab Order:	San Juan Refining 0706281			Client Sample II Collection Dat	): TP-#3 e: 6/19/2	3 2007 10:05:00 AM	
Project:	River Terrace 2nd Qtr	2007-Water		Date Received	<b>1:</b> 6/20/2	6/20/2007 AQUEOUS	
Lab ID:	0706281-11		1 1	Matri	x: AQU		
Analyses	· · · · · · · · · · · ·	Result	PQL	Qual Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC	
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	6/21/2007 9:49:58 PM	
Motor Oil Rang	je Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 9:49:58 PM	
Surr: DNOP		110	58-140	%REC	1	6/21/2007 9:49:58 PM	
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB	
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	6/28/2007 6:41:56 AM	
Surr: BFB		96.5	79.2-121	%REC	1	6/28/2007 6:41:56 AM	
EPA METHOD	8021B: VOLATILES					Analyst: NSB	
Methyl tert-but	yl ether (MTBE)	ND	2.5	µg/L	1	6/28/2007 6:41:56 AM	
Benzene		ND	1.0	µg/L	1	6/28/2007 6:41:56 AM	
Toluene		ND	1.0	µg/L	1	6/28/2007 6:41:56 AM	
Ethylbenzene		ND	1.0	µg/L	1	6/28/2007 6:41:56 AM	
Xylenes, Total		ND	2.0	µg/L	1	6/28/2007 6:41:56 AM	
J Surr: 4-Bror	nofluorobenzene	88.8	70.2-105	%REC	1	6/28/2007 6:41:56 AM	
EPA 6010B: T	OTAL RECOVERABLE N	IETALS				Analyst: CMS	
Barium		0.20	0.020	mg/L	1	7/3/2007 3:31:19 PM	
Chromium		0.0083	0.0060	mg/L	1	7/3/2007 3:31:19 PM	
Lead		0.0073	0.0050	mg/L	1	7/3/2007 3:31:19 PM	

Qualifiers:

J

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
  - Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLUENT.	San Juan Refining			Client Sample ID	• • • • • • • • • • • • • • • • • •	
	ozokogi			Chefft Sample 15	· 11-#2	
Lab Order:	0706281	2007 11		Collection Date	: 6/19/.	2007 1:15:00 PM
Project:	River Terrace 2nd Qtr 1	2007-Water		Date Received	: 6/20/2	2007
Lab ID:	0706281-12			Matrix	: AQU	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range C	Organics (DRO)	ND	1.0	mg/L	1	6/21/2007 10:59:58 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 10:59:58 PM
Surr: DNOP		109	58-140	%REC	1	6/21/2007 10:59:58 PM
EPA METHOD	8015B: GASOLINE RANG	ε				Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	6/28/2007 7:12:02 AM
Surr: BFB		95.1	79.2-121	%REC	1	6/28/2007 7:12:02 AM
EPA METHOD	8021B: VOLATILES			ia.,		Analyst: <b>NSB</b>
Methyl tert-buty	/l ether (MTBE)	ND	2.5	µg/L	1	6/28/2007 7:12:02 AM
Benzene		ND	1.0	µg/L	1	6/28/2007 7:12:02 AM
Toluene		ND	1.0	µg/L	1	6/28/2007 7:12:02 AM
Ethylbenzene		ND	1.0	μg/L	1	6/28/2007 7:12:02 AM
Xylenes, Total		ND	2.0	µg/L	1	6/28/2007 7:12:02 AM
Surr: 4-Brom	nofluorobenzene	87.7	70.2-105	%REC	1	6/28/2007 7:12:02 AM
EPA 6010B; T	OTAL RECOVERABLE MI	ETALS				Analyst: CMS
Barium		0.91	0.020	mg/L	1	7/3/2007 3:33:52 PM
Chromium		0.018	0.0060	mg/L	1	7/3/2007 3:33:52 PM
Lead		0.020	0.0050	mg/L	1	7/3/2007 3:33:52 PM

Date: 05-Jul-07

 Qualifiers:
 \*
 Value exceeds Maximum Contaminant Level
 B

 E
 Value above quantitation range
 H

 J
 Analyte detected below quantitation limits
 MCL

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level RL Reporting Limit

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Page 12 of 12

## **QA/QC SUMMARY REPORT**

Client:San Juan Ref.Project:River Terrace	ining 2nd Qtr 2	007-Water				Work Order: 070628
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RPDLimit Qual
Method: SW8015		431435 84 - 43			······	
Sample ID: MB-13223	·	MBLK			Batch ID: 13223	Analysis Date: 6/21/2007 10:07:39 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0			
Motor Oil Range Organics (MRO)	ND	mg/L	5.0			
Sample ID: MB-13224		MBLK			Batch ID: 13224	Analysis Date: 6/21/2007 11:52:15 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0			
Motor Oil Range Organics (MRO)	ND	mg/L	5.0			
Sample ID: LCS-13223		LCS			Batch ID: 13223	Analysis Date: 6/21/2007 10:42:20 AM
Diesel Range Organics (DRO)	4.532	mg/L	1.0	90.6	74 157	
Sample ID: LCS-13224		LCS			Batch ID: 13224	Analysis Date: 6/21/2007 12:27:31 PM
Diesel Range Organics (DRO)	4.861	mg/L	1.0	97.2	74 157	
Sample ID: LCSD-13223		LČSD			Batch ID: 13223	Analysis Date: 6/21/2007 11:17:17 AM
Diesel Range Organics (DRO)	5.076	ma/L	1.0	102	74 157	11.3 23
Sample ID: LCSD-13224		LCSD			Batch ID: 13224	Analysis Date: 6/21/2007 1:02:34 PM
Diesel Range Organics (DRO)	4.850	mg/L	1.0	97.0	74 157	0.227 23
Method: SW8015						
Sample ID: 0706281-07A MSD		MSD			Batch ID: R24153	Analysis Date: 6/27/2007 10:28:03 PM
Gasoline Range Organics (GRO)	0.4618	ma/L	0.050	92.4	80 115	0.0433 8.39
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID: R24153	Analysis Date: 6/27/2007 9:15:37 A
Gasoline Range Organics (GRO)	ND	ma/l	0.050			
Sample ID: 5ML REAGENT BLA	110	MBLK	0.000		Batch ID: R24163	Analysis Date: 6/28/2007 9:59:41 AM
Gasoline Bange Organics (GBO)	ND	mo/l	0.050			
Sample ID: 25UG GRO LCS	ND	LCS	0.000		Batch ID: R24153	Analysis Date: 6/27/2007 10:57:56 PM
	0 5050	200	0.050	4.04	00 445	
Casoline Range Organics (GRO)	0.5052	mg/L	0.050	101	80 115 . Potob ID: <b>D24162</b>	Applying Date: 6/28/2007 11:20:57 AM
Sample ID. 2.500 GRU LCS		LUS			Datum D. 1824103	Analysis Date. 0/28/2007 11:29.57 AM
Gasoline Range Organics (GRO)	0.4870	mg/L	0.050	97.4	80 115	
Sample ID: 0706281-07A MS		MS			Batch ID: R24153	Analysis Date: 6/2//2007 9:58:02 PM
Gasoline Range Organics (GRO)	0.4620	mg/L	0.050	92.4	80 115	

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 13/16

## QA/QC SUMMARY REPORT

Client:	San Juan Refining							
oject: ]	River Terrace 2nd Qt	r 2007-Water					Wor	<b>k Order</b> : 0706281
Analyte	Resul	t Units	PQL	%Rec	LowLimit	HighLimit	%RPD R	PDLimit Qual
Method: SW8021	· · · · · · · · · · · · · · · · · · ·							14
Sample ID: 0706281	1-07A MSD	MSD			Batch	ID: R24153	Analysis Date:	6/27/2007 10:28:03 PM
Methyl tert-butyl ether	r (MTBE) 8.330	µg/L	2.5	101	51.2	138	3.84	28
Benzene	6.186	µg/L	1.0	110	85.9	113	0.194	27
Toluene	41.38	µg/L	1.0	103	86.4	113	0.0532	19
Ethylbenzene	8.278	μg/L	1.0	105	83.5	118	0.434	10
Xylenes, Total	48.02	µg/L	2.0	104	83.4	122	0.677	13
Sample ID: 5ML RE	AGENT BLA	MBLK	•		Batch	ID: <b>R24153</b>	Analysis Date:	6/27/2007 9:15:37 AM
Methyl tert-butyl ethe	r (MTBE) ND	µg/L	2.5					
Benzene	ND	µg/L	1.0					
Toluene	ND	μg/L	1.0			•		
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	μg/L	2.0					
Sample ID: 5ML RE	EAGENT BLA	MBLK			Batch	ID: R24163	Analysis Date	6/28/2007 9:59:41 AM
Methyl tert-butyl ethe	r (MTBE) ND	µa/L	2.5					
Benzene	ND	ug/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: 100NG	BTEX LCS	LCS			Batch	ID: R24153	Analysis Date	: 6/27/2007 11:57:52 PM
ethyl tert-butyl ethe	r (MTBE) 22.31	ua/L	2.5	112	51.2	138		
enzene	21.32	µa/L	1.0	107	85.9	113		
foluene	21.33	µa/L	1.0	107	86.4	113		
Ethylbenzene	21.45	μg/L	1.0	107	83.5	118		
Xylenes, Total	63.41	µg/L	2.0	106	83.4	122		•
Sample ID: 100NG	BTEX LCS	LCS			Batch	ID: R24163	Analysis Date	: 6/28/2007 11:59:59 AM
Methyl tert-butyl ethe	er (MTBE) 21.70	ua/L	2.5	109	51.2	138		
Benzene	21.38	µq/L	1.0	107	85.9	113		
Toluene	20.71	ug/L	1.0	104	86.4	113		
Ethylbenzene	20.80	ug/L	1.0	104	83.5	118		
Xylenes, Total	61.60	μg/L	2.0	102	83.4	122		
Sample ID: 070628	31-07A MS	MS			Batch	D: R24153	Analysis Date	6/27/2007 9:58:02 PN
Methyl tert-butyl ethe	er (MTBE) 8.656	) jug/L	2.5	105	51.2	138	-	
Benzene	6.198	3 µg/L	1.0	111	85.9	113		
Toluene	41.40	.с ) µg/L	1.0	103	86.4	113		
Ethylbenzene	8.314	μg/L	1.0	105	83.5	118		
Xylenes, Total	47.70	) µg/L	2.0	103	83.4	122		

ualifiers: E

- Value above quantitation range
- Analyte detected below quantitation limits

J RPD outside accepted recovery limits R

- Η· Holding times for preparation or analysis exceeded
  - Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 14/16

ND

Date: 05-Jul-07

## QA/QC SUMMARY REPORT

Client:San Juan RefiningProject:River Terrace 2nd Qtr 2007-Water

070628 Work Order: Analyte Result PQL %Rec Units %RPD RPDLimit Qual LowLimit HighLimit Method: SW6010A Analysis Date: Sample ID: MB-13241 MBLK Batch ID: 13241 7/3/2007 2:42:57 PM Barium ND mg/L 0.020 Chromium ND mg/L 0.0060 Lead ND mg/L 0.0050 LCS Sample ID: LCS-13241 Batch ID: Analysis Date: 7/3/2007 2:36:54 PM 13241 Barium 0.5090 mg/L 0.020 1.02 80 120 Chromium 0.5194 mg/L 0.0060 104 80 120 Lead 0.5088 mg/L 0.0050 102 80 120

#### Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits

Н

ND

S

Sam	ple Receipt Ch	ecklist			
Client Name SJR		Date and Tim	e Received:		6/20/2007
Work Order Number 0706281	balm	Received b	y TLS		
Signature	Date				
Matrix Carrier na	me <u>UPS</u>				
Shipping container/cooler in good condition?	Yes 🔽	No 🗌	Not Present		
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗍	Not Present		Not Shipped
Custody seals intact on sample bottles?	Yes 🗌	No 🗔	N/A	$\checkmark$	
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 🗍			
Water - VOA vials have zero headspace? No VOA vials	submitted	Yes 🗹	No 🗌	]	
Water - Preservation labels on bottle and cap match?	Yes 🔽	No 🗌	N/A	]	
Water - pH acceptable upon receipt?	Yes 🔽	No 🗆	N/A	]	
Container/Temp Blank temperature?	2°	4° C ± 2 Accep	table		
COMMENTS:		If given sufficie	nt time to cool.		
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Client contacted Date contacted	:	Pe	rson contacted		
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#### COVER LETTER

Thursday, September 13, 2007

Cindy Hurtado San Juan Refining #50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace - 3rd Qtr-2007

Dear Cindy Hurtado:

Order No.: 0708308

Hall Environmental Analysis Laboratory, Inc. received 9 sample(s) on 8/23/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

( hove

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Date: 13-Sep-07

CLIENT:	San Juan Refining
Project:	River Terrace - 3rd Qtr-2007
Lab Order:	0708308

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	<b>Collection Date</b>
0708308-01A	TP-13	R24905	EPA Method 8015B: Gasoline Range	8/21/2007 8:28:00 AM
0708308-01A	TP-13	13697	EPA Method 8015B: Diesel Range	8/21/2007 8:28:00 AM
0708308-01A	TP-13	R24905	EPA Method 8021B: Volatiles	8/21/2007 8:28:00 AM
0708308-01B	TP-13	13788	EPA 6010B: Total Recoverable Metals	8/21/2007 8:28:00 AM
0708308-02A	TP-12	R24905	EPA Method 8021B: Volatiles	8/21/2007 8:40:00 AM
0708308-02A	TP-12	R24905	EPA Method 8015B: Gasoline Range	8/21/2007 8:40:00 AM
0708308-02A	TP-12	13697	EPA Method 8015B: Diesel Range	8/21/2007 8:40:00 AM
0708308-02B	TP-12	13788	EPA 6010B: Total Recoverable Metals	8/21/2007 8:40:00 AM
0708308-03A	TP-11	13697	EPA Method 8015B: Diesel Range	8/21/2007 9:00:00 AM
0708308-03A	TP-11	R24905	EPA Method 8021B: Volatiles	8/21/2007 9:00:00 AM
0708308-03A	TP-11	R24905	EPA Method 8015B: Gasoline Range	8/21/2007 9:00:00 AM
0708308-03B	TP-11	13788	EPA 6010B: Total Recoverable Metals	8/21/2007 9:00:00 AM
0708308-04A	TP-10	R24905	EPA Method 8021B: Volatiles	8/21/2007 9:25:00 AM
0708308-04A	TP-10	R24905	EPA Method 8015B: Gasoline Range	8/21/2007 9:25:00 AM
0708308-04A	TP-10	13697	EPA Method 8015B: Diesel Range	8/21/2007 9:25:00 AM
0708308-04B	TP-10	13788	EPA 6010B: Total Recoverable Metals	8/21/2007 9:25:00 AM
0708308-05A	TP-3	13697	EPA Method 8015B: Diesel Range	8/21/2007 9:42:00 AM
0708308-05A	TP-3	R24905	EPA Method 8021B: Volatiles	8/21/2007 9:42:00 AM
0708308-05A	TP-3	R24905	EPA Method 8015B: Gasoline Range	8/21/2007 9:42:00 AM
0708308-05B	TP-3	13788	EPA 6010B: Total Recoverable Metals	8/21/2007 9:42:00 AM
0708308-06A	DW-#1	R24905	EPA Method 8021B: Volatiles	8/21/2007 10:30:00 AM
0708308-06A	DW-#1	R24905	EPA Method 8015B: Gasoline Range	8/21/2007 10:30:00 AM
0708308-06A	DW-#1	13697	EPA Method 8015B: Diesel Range	8/21/2007 10:30:00 AM
0708308-06B	DW-#1	13768	EPA Method 7470: Mercury	8/21/2007 10:30:00 AM
0708308-06B	DW-#1	13788	EPA 6010B: Total Recoverable Metals	8/21/2007 10:30:00 AM
0708308-07A	TP-7	R24905	EPA Method 8021B: Volatiles	8/21/2007 10:45:00 AM
0708308-07A	TP-7	R24905	EPA Method 8015B: Gasoline Range	8/21/2007 10:45:00 AM
0708308-07A	TP-7	13697	EPA Method 8015B: Diesel Range	8/21/2007 10:45:00 AM
0708308-07B	TP-7	13788	EPA 6010B: Total Recoverable Metals	8/21/2007 10:45:00 AM
0708308-08A	TP-9	R24905	EPA Method 8021B: Volatiles	8/21/2007 11:05:00 AM
0708308-08A	TP-9	R24905	EPA Method 8015B: Gasoline Range	8/21/2007 11:05:00 AM
0708308-08A	TP-9	13697	EPA Method 8015B: Diesel Range	8/21/2007 11:05:00 AM
0708308-08B	TP-9	13788	EPA 6010B: Total Recoverable Metals	8/21/2007 11:05:00 AM
0708308-09A	Trip Blank	R24905	EPA Method 8015B: Gasoline Range	
0708308-09A	Trip Blank	R24905	EPA Method 8021B: Volatiles	

CLIENT:	San Juan Refining	•		Client Sample ID:	TP-13			
Lab Order:	0708308			<b>Collection Date:</b>	8/21/2	2007 8:28:00 AM		
Project:	River Terrace - 3rd Qt	r-2007		Date Received:	8/23/2	2007		
Lab ID:	0708308-01			Matrix:	AQU	EOUS		
Analyses		Result	PQL Qu	al Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC		
Diesel Range (	Drganics (DRO)	ND	1.0	mg/L	1	9/2/2007 3:38:46 AM		
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	9/2/2007 3:38:46 AM		
Surr: DNOP		130	58-140	%REC	1	9/2/2007 3:38:46 AM		
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: SMP		
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	8/25/2007 2:30:32 AM		
Surr: BFB		103	79.2-121	%REC	1	8/25/2007 2:30:32 AM		
EPA METHOD	8021B: VOLATILES					Analyst: SMP		
Methyl tert-but	yl ether (MTBE)	ND	2.5	µg/L	1	8/25/2007 2:30:32 AM		
Benzene		ND	1.0	µg/L	1	8/25/2007 2:30:32 AM		
Toluene		ND	1.0	µg/L	1	8/25/2007 2:30:32 AM		
Ethylbenzene		ND	1.0	µg/L	1	8/25/2007 2:30:32 AM		
Xylenes, Total		ND	2.0	µg/L	1	8/25/2007 2:30:32 AM		
Surr: 4-Bron	nofluorobenzene	88.0	70.2-105	%REC	1	8/25/2007 2:30:32 AM		
EPA 6010B: T	OTAL RECOVERABLE M	ETALS				Analyst: TES		
Lead		0.012	0.0050	ma/L	1	9/11/2007 12:06:15 PM		

Qualifiers:

¥

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- 3 Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

	· · · · · · · · · · · · · · · · · · ·					· · · · ·		
CLIENT:	San Juan Refining			Client Sample	<b>ID:</b> TP-12			
Lab Order:	0708308			Collection <b>D</b>	ate: 8/21/2	2007 8:40:00 AM		
Project:	River Terrace - 3rd Qt	r-2007		Date Recei	ved: 8/23/2	2007		
Lab ID:	0708308-02			Ma	trix: AQU	AQUEOUS		
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE			·		Analyst: SCC		
Diesel Range (	Drganics (DRO)	ND	1.0	mg/L	1	9/2/2007 4:09:46 AM		
Motor Oil Rang	ge Organics (MRO)	ND	5.0	mg/L	1	9/2/2007 4:09:46 AM		
Surr: DNOP		130	58-140	%REC	1	9/2/2007 4:09:46 AM		
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: SMP		
Gasoline Rang	je Organics (GRO)	ND	0.050	mg/L	1	8/25/2007 4:00:39 AM		
Surr: BFB		101	79.2-121	%REC	1	8/25/2007 4:00:39 AM		
EPA METHOD	8021B: VOLATILES					Analyst: SMP		
Methyl tert-but	yl ether (MTBE)	ND	2.5	hð/L	1	8/25/2007 4:00:39 AM		
Benzene		ND	1.0	μg/L	1	8/25/2007 4:00:39 AM		
Toluene		ND	1.0	hð\r	1	8/25/2007 4:00:39 AM		
Ethylbenzene		ND	1.0	µg/L	· 1	8/25/2007 4:00:39 AM		
Xylenes, Total		ND	2.0	µg/L	1	8/25/2007 4:00:39 AM		
Surr: 4-Bron	nofluorobenzene	86.4	70.2-105	%REC	. 1	8/25/2007 4:00:39 AM		
EPA 6010B: T	OTAL RECOVERABLE M	IETALS				Analyst: TES		
Lead		0.021	0.0050	ma/l	1	9/11/2007 12:08:47 PM		

Date: 13-Sep-07

Qualifiers:

- Е Value above quantitation range
- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits S

Value exceeds Maximum Contaminant Level

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	San Juan Refining			Client Sa	mple ID: TP-1	1		
Lab Order:	0708308			Collect	ion Date: 8/21/	2007 9:00:00 AM		
Project:	River Terrace - 3rd Qt	r-2007		Date	Received: 8/23/	2007		
Lab ID:	0708308-03				Matrix: AQU	EOUS		
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE		. <u></u>			Analyst: SCC		
Diesel Range (	Drganics (DRO)	ND	1.0	mg/L	1	9/2/2007 4:40:45 AM		
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	9/2/2007 4:40:45 AM		
Surr: DNOP		139	58-140	%REC	1	9/2/2007 4:40:45 AM		
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: SMP		
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	8/25/2007 4:30:30 AM		
Surr: BFB		98.2	79.2-121	%REC	1	8/25/2007 4:30:30 AM		
EPA METHOD	8021B: VOLATILES					Analyst: SMP		
Methyl tert-but	yl ether (MTBE)	ND	2.5	µg/L	1	8/25/2007 4:30:30 AM		
Benzene		ND	1.0	µg/L	1	8/25/2007 4:30:30 AM		
Toluene		ND	1.0	μg/L	1	8/25/2007 4:30:30 AM		
Ethylbenzene		ND	1.0	µg/L	1	8/25/2007 4:30:30 AM		
Xylenes, Total		ND	2.0	µg/L	1	8/25/2007 4:30:30 AM		
Surr: 4-Bron	nofluorobenzene	83.7	70.2-105	%REC	1	8/25/2007 4:30:30 AM		
EPA 6010B: T	OTAL RECOVERABLE N	IETALS				Analyst: TES		
Lead		0.010	0.0050	ma/i.	1	9/11/2007 12:11:18 PM		

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- Ε Value above quantitation range
- J Analyte detected below quantitation limits

Hall Environmental Analysis Laboratory, Inc.

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 4/15
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL. Reporting Limit

Page 3 of 9

Date: 13-Sep-07

Lab Order:	0708308			<b>Collection Date</b>	: 8/21/2	2007 9:25:00 AM			
Project:	River Terrace - 3rd Qtr	-2007		Date Received	: 8/23/2	8/23/2007			
Lab ID:	0708308-04			Matrix	: AQU	AQUEOUS			
Analyses		Result	PQL	Qual Units	DF	Date Analyzed			
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC			
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	9/2/2007 5:11:45 AM			
Motor Oil Rang	je Organics (MRO)	ND	5.0	mg/L	1	9/2/2007 5:11:45 AM			
Surr: DNOP		134	58-140	%REC	1	9/2/2007 5:11:45 AM			
EPA METHOD	8015B: GASOLINE RANG	ε				Analyst: SMP			
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1.	8/25/2007 5:30:20 AM			
Surr: BFB		100	79.2-121	%REC	1	8/25/2007 5:30:20 AM			
EPA METHOD	8021B: VOLATILES					Analyst: SMP			
Methyl tert-but	yl ether (MTBE)	ND	2.5	µg/L	1	8/25/2007 5:30:20 AM			
Benzene		ND	1.0	µg/L	1	8/25/2007 5:30:20 AM			
Toluene		ND	1.0	μg/L .	1	8/25/2007 5:30:20 AM			
Ethylbenzene		ND	1.0	µg/L	1	8/25/2007 5:30:20 AM			
Xylenes, Total		ND	2.0	µg/L	1	8/25/2007 5:30:20 AM			
Surr: 4-Bror	nofluorobenzene	84.9	70.2-105	%REC	1	8/25/2007 5:30:20 AM			
EPA 6010B: T	OTAL RECOVERABLE MI	ETALS				Analyst: TES			
Lead		0.0059	0.0050	mg/L	1	9/11/2007 12:13:48 PM			

San Juan Refining

CLIENT:

Date: 13-Sep-07

Client Sample ID: TP-10

Qualifiers:

Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits 5/15

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Containinant Level

RL Reporting Limit

5

Page 4 of 9

Lab Order:	0708308			<b>Collection Date:</b>	8/21/2007 9:42:00 AM 8/23/2007 AQUEOUS			
Project:	River Terrace - 3rd Qt	r-2007		Date Received:				
Lab ID:	0708308-05			Matrix:				
Analyses		Result	PQL Qual	Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE				·	Analyst: SCC		
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	9/2/2007 5:42:46 AM		
Motor Oil Rang	ge Organics (MRO)	ND	5.0	mg/L	1	9/2/2007 5:42:46 AM		
Surr: DNOP		138	58-140	%REC	1	9/2/2007 5:42:46 AM		
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: SMP		
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	8/25/2007 6:00:11 AM		
Surr: BFB		101	79.2-121	%REC	1	8/25/2007 6:00:11 AM		
EPA METHOD	8021B: VOLATILES					Analyst: SMP		
Methyl tert-but	yl ether (MTBE)	ND	2.5	µg/L	1	8/25/2007 6:00:11 AM		
Benzene		ND	1.0	µg/L	1	8/25/2007 6:00:11 AM		
Toluene		ND	1.0	µg/L	1	8/25/2007 6:00:11 AM		
Ethylbenzene		ND	1.0	µg/L	1	8/25/2007 6:00:11 AM		
Xylenes, Totai		ND	2.0	µg/L	1	8/25/2007 6:00:11 AM		
Surr: 4-Bron	nofluorobenzene	85.4	70.2-105	%REC	1	8/25/2007 6:00:11 AM		
EPA 6010B: T	OTAL RECOVERABLE M	ETALS				Analyst: TES		
Lead		0.010	0.0050	mg/L	1	9/11/2007 12:16:19 PM		

CLIENT: San Juan Refining Date: 13-Sep-07

Client Sample ID: TP-3

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 6/15
- Analyte detected in the associated Method Blank
- В
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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CLIENT:	San Juan Refining			Client Sample ID:	DW	#1
Lab Order:	0708308			<b>Collection Date:</b>	8/21/	/2007-10:30:00 AM
Project:	River Terrace - 3rd Qtr	-2007		Date Received:	8/23/	2007
Lab ID:	0708308-06			Matrix:	AQU	JEOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE	******			<u> </u>	Analyst: SCC
Diesel Range C	Irganics (DRO)	ND	1.0	ma/L	1	9/2/2007 6:13:46 AM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	9/2/2007 6:13:46 AM
Surr: DNOP		138	58-140	%REC	1	9/2/2007 6:13:46 AM
EPA METHOD	8015B: GASOLINE RANG	E				Analyst SMD
Gasoline Range	e Organics (GRO)	0.29	0.050	ma/L	1	8/25/2007 6:30:15 AM
Surr: BFB		113	79.2-121	%REC	1	8/25/2007 6:30:15 AM
EPA METHOD	8021B: VOLATILES					Analyst CARD
Methyl tert-buty	l ether (MTBE)	ND	2.5	ua/I	1	Analyst: SiviP
Benzene		ND	1.0	µg/⊑ µg/l	1	8/25/2007 6:30:15 AM
Toluene		ND	1.0	ug/l	1	8/25/2007 6.30.15 AM
Ethylbenzene		ND	1.0	uo/L	1	8/25/2007 6:30:15 AM
Xylenes, Total		6.9	2.0	ua/L	1	8/25/2007 6:30:15 AM
Surr: 4-Brom	ofluorobenzene	96.6	70.2-105	%REC	1	8/25/2007 6:30:15 AM
EPA METHOD	7470: MERCURY					
Mercury		ND	0.00020	mg/L	1	Analyst: <b>SLB</b> 9/6/2007 3:30:20 PM
EPA 6010B: TO	OTAL RECOVERABLE ME	TALS				
Lead		0.0089	0.0050	mg/L	1	Analyst: TES 9/11/2007 12:18:46 PM

Date: 13-Sep-07

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Qualifiers:	*	Value exceeds Maximum Containinant Level	В	Analyte detected in the a	issociated Method Blank	
	E	Value above quantitation range	Н	Holding times for prepar	ation or analysis exceeded	
	J	Analyte detected below quantitation limits	MCI	Maximum Contonniaou	1)	
	A//				2. 21.21.21.2	 

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Lab Order:	0708308			Collection Da	te: 8/21/2	2007 10:45:00 AM
Project:	River Terrace - 3rd	Qtr-2007		Date Receive	ed: 8/23/2	2007
Lak ID:	0708308-07				ix: AQUI	SOUS
Analyses		Rosult	ŦQĽ	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANG	Ε				Analyst: SCC
Diesel Range I	Organics (DRO)	ND	1.0	mg/L	1	9/2/2007 7:15:44 AM
Motor Oil Rang	ge Organics (MRO)	ND	5.0	mg/L	1	9/2/2007 7:15:44 AM
Surr: DNOP		139	58-140	%REC	1	9/2/2007 7:15:44 AM
EPA METHOD	8015B: GASOLINE RA	NGE				Analyst: SMP
Gasoline Rang	ge Organics (GRO)	ND	0.050	mg/L	1	8/25/2007 7:30:14 AM
Surr: BFB		100	79.2-121	%REC	1	8/25/2007 7:30:14 AM
EPA METHOD	8021B: VOLATILES					Analyst: SMP
Methyl tert-but	tyl ether (MTBE)	ND	2.5	µg/L	1	8/25/2007 7:30:14 AM
Benzene		ND	1.0	μg/L	1	8/25/2007 7:30:14 AM
Toluene		ND	1.0	µg/L	1	8/25/2007 7:30:14 AM
Ethylbenzene		ND	1.0	µg/L	1	8/25/2007 7:30:14 AM
Xylenes, Total		ND	2.0	µg/L	1	8/25/2007 7:30:14 AM
Surr: 4-Bror	nofluorobenzene	85.1	70.2-105	%REC	1	8/25/2007 7.30:14 AM
EPA 6010B: T	OTAL RECOVERABLE	METALS				Analyst: TES
Lead		0.0059	0.0050	mg/L	1	9/11/2007 12:21:14 PM

San Juan Refining

CLIENT:

Client Sample ID: TP-7 Collection Date: 8/21/2007 10:45:00 AM

Qualifiers:

- Value exceeds Maximum Contaminant Level
- Value above quantitation range E
- Analyte detected below quantitation limits J
- Not Detected at the Reporting Limit ND
- S Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

<u>CI IDNE</u>	Carron Company	· ·	·			
\$-335 \$\$53557:	STREES			- The second	tialls Statis	ant there are
Yang make	River Terrass - 3rd G	11-6007		Röté Beri	avel 1835	111
Lab (0):	80-8083080			М	atrix: AQUI	Eous
Analyses		Result	PQL (	Qual Units	DF	Date Analyzed
EPA METHO	D 8015B: DIESEL RANGE	· · · · · · · · · · · · · · · · · · ·				Analyst: SCC
Diesel Range	Organics (DRO)	ND	1.0	mg/L	1	9/2/2007 7:46:44 AM
Motor Oil Rar	nge Organics (MRO)	ND	5.0	mg/L	1	9/2/2007 7:46:44 AM
Surr: DNO	P	134	58-140	%REC	1	9/2/2007 7:46:44 AM
EPA MÈTHOI	D 8015B: GASOLINE RAN	GE				Analyst: SMP
Gasoline Ran	ige Organics (GRO)	ND	0.050	ma/L	1	8/25/2007 8:00:24 AM
Surr: BFB		105	79.2-121	%REC	1	8/25/2007 8:00:24 AM
ΕΡΔ ΜΕΤΗΟ						
Methyl tert-bi	ityl ether (MTRE)	רווא	0 5			Analyst: SMP
Benzene			2.5	µg/L	1	8/25/2007 8:00:24 AM
Toluene			1.0	µg/L	1	8/25/2007 8:00:24 AM
Ethylbenzene			1.0	µg/L		8/25/2007 8:00:24 AM
Xylenes Tota	- ]		20	µg/L		8/25/2007 8:00:24 AM
Surr: 4-Bro	mofluorobenzene	89.8	70.2-105	%REC	1	8/25/2007 8:00:24 AM 8/25/2007 8:00:24 AM
EPA 6010B:	TOTAL RECOVERABLE M	ETALS				Analyst: TES
Lead		0.013	0.0050	mg/L	· 1	9/11/2007 12:23:43 PM
	· ·					
			,			
	· · · ·					
Qualifiers:	<ul> <li>Value exceeds Maximum</li> <li>E Value above quantitation</li> </ul>	Contaminant Lev range	vel	B Analyte H Holding	detected in the a times for prepar	ssociated Method Blank ation or analysis exceeded
	J Analyte detected below qu	antitation limits		MCL Maximu	m Contaminant	Level
	ND - Not Detected at the Repor S Spike recovery outside act	ting Limit - cepted recovery }	<sup>imits</sup> 9/15	RL Reportir	eg Limit	Page 8 o

Date: 13-Sep-07

Date: 13-Sep-07

CLIENT:San Juan RefiningClient Sample ID:Trip BlankLab Order:0708308Collection Date:Project:River Torrace - 3rd Qtr-2007Date Received:8/23/2007Lab ID:0708308-09Matrix:TRIP BLANKAnalysesResultPOLOnal UnitsDF

Analyses	Result	PQL Qu	al Units	ÐF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAN	NGE	······································			Analyst: SMP
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/25/2007 8:30:19 AM
Surr: BFB	99.9	79.2-121	%REC	1	8/25/2007 8:30:19 AM
EPA METHOD 8021B: VOLATILES					Analyst: SMP
Methyl tert-butyl ether (MTBE)	ND	2.5	µg/L	1	8/25/2007 8:30:19 AM
Benzene	ND	1.0	µg/L	1	8/25/2007 8:30:19 AM
Toluene	ND	1.0	µg/L	1	8/25/2007 8:30:19 AM
Ethylbenzene	ND	1.0	µg/L	1	8/25/2007 8:30:19 AM
Xylenes, Total	ND	2.0	µg/L	1	8/25/2007 8:30:19 AM
Surr: 4-Bromofluorobenzene	85.2	70.2-105	%REC	1	8/25/2007 8:30:19 AM

Qualifiers:

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- Value exceeds Maximum Containinant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 10 / 15
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 9 of 9

Lab Order:	0708308						
Client:	San Juan Refining				DATESR	EPORT	-
Project:	River Terrace - 3rd (	Qur-2007					
Sample 1D	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0708308-01A	TP-13	8/21/2007 8:28:00 AM	Aqueous	EPA Method 8015B: Diesel Runge	13697	8/27/2007	9/2/2007
				EPA Method 8015B: Gasoline Range	R24905		8/25/2007
				EPA Method 8021B: Volatiles	R24905		8/25/2007
0708308-01B				EPA 6010B: Total Recoverable Metals	13788	9/7/2007	6/11/2002
0708308-02A	TP-12	8/21/2007 8:40:00 AM		'EPA Method 8015B: Diesel Range	13697	8/27/2007	9/2/2007
				EPA Method 8015B: Gasoline Range	R24905		8/25/2007
				EPA Method 8021B: Volatiles	R24905		8/25/2007
070\$308-02B	·			EPA 6010B: Total Recoverable Metals	13788	£002/L/6	9/11/2007
0708308-03A	TP-1)	8/21/2007 9:00;00 AM		EPA Method 8015B: Diesel Range	13697	8/27/2007	9/2/2007
				EPA Method 8015B: Gasoline Range	R24905		8/25/2007
				EPA Method 8021B: Volatiles	R24905		8/25/2007
0708308-03B				EPA 6010B: Total Recoverable Metals	13788	9/7/2007	9.41/2007
0708308-04A	TP-10	8/21/2007 9/25:00 A M		EPA Method 8015B: Diesel Range	13697	8.27'2007	9 2 <i>:</i> 2007
				EPA Method 8015B: Gasoline Range	R24905		8/25/2007
				EPA Method 8021B: Volatiles	R24905		8/25/2007
0708308-04B				EPA 6010B: Total Recoverable Metals	13788	677/2007	9/11/2007
0708308-05A	TP-3	8/21/2007 9:42:00 AM		EPA Method 8015B: Diesel Range	13697	8/27/2007	9/2/2007
				EPA Method 8015B: Gasoline Range	R24905		8/25/2007
				EPA Method 8021B: Volatiles	R24905		8/25/2007
0708308-05B				EPA 6010B: Total Recoverable Metals	13788	9/7/2007	9/11/2007
0708308-06A	DW-#	8/21/200710:30:00 AM		EPA Method 8015B: Diesel Range	13697	8/27/2007	9/2/2007
				EPA Method 8015B: Gasoline Range	R24905		8/25/2007
				EPA Method 8021B: Volatiles	R24905		8/25/2007
0708308-06B				EPA 6010B: Total Recoverable Metals	13788	9/7/2007	9.11/2007
				EPA Method 7470: Mercury	13768	6/6/2007	9:6/2007
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13-Sep-07

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Page 1 of 2

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Lab Order: Client:	0708308 San Juan Refinin <u>e</u>				DATES R	EPORT	
Project:	River Terrace - 3rd Q	0tr-2007					
Sample ID	Client Sample 1D	Collection Date	Matrix	Test Name	QC Bateh ID	Prep Date	Analysis Date
0708308-07A	TP-7	8/21/2007 10:45:00 AM	Aqueous	EPA Method 8015B: Diesel Range	13697	8/27/2007	6/2/2007
				EPA Method 8015B: Gasoline Range	R24905		8/25/2007
				EPA Method 8021B: Volatiles	R24905		8/25/2007
0708308-07B				EPA 6010B: Total Recoverable Metals	13788	9/7/2007	9/11/2007
0708308-08A	TP-9	8/21/2007 11:05:00 AM		EPA Method 8015B: Diesel Range	13697	8/27/2007	9/2/2007
				EPA Method 8015B: Gasoline Range	R24905		8/25/2007
				EPA Method 8021B: Volatiles	R24905		8/25/2007
0708308-08B				EPA 6010B: Total Recoverable Metals	13788	9/7/2007	2002/11/6
0708308-09A	Trip Blank		Trip Blank	EPA Method 8015B: Gasoline Range	R24905		8/25/2007
				EPA Method 8021B: Volatiles	R24905		8/25/2007

13-Sep-07

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12/15

Page 2 of 2

## QA/QC SUMMARY REPORT

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Client:

San Juan Refining

Project:

River Terrace - 3rd Qtr-2007

Work Order: 0708308

Analyte	Result	Units	PQL	%Rec	LowLimit Hi	ghLimit	%RPD	RPDLimit	Qual
Method: SW8015	·		-		-				
Sample ID: MB-13697		MBLK			Batch ID:	13697	Analysis Da	te: 8/31/	/2007 5:16:50 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: MB-13697		MBLK			Batch ID:	13697	Analysis Da	te: 9/2.	/2007 1:34:30 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-13697		LCS			Batch ID:	13697	Analysis Da	te: 8/31	/2007 5:47:51 AM
Diesel Range Organics (DRO)	6.812	ma/L	1.0	136	74	157			
Sample ID: JC #1		LCS			Batch ID:	13697	Analysis Da	te: 8/31/2	2007 12:30:21 PM
Diosol Papas Organics (DPO)	7.040	mall	1.0	1/1	74	167			
Sample ID: 10 #2	7.049	ing/L	1.0	[4]	Potob ID:	12607		to: 0/04	10007 101-57 DM
		200			baidrib.	15097	Analysis Da	le. 0/31	12007 1.01.37 FM
Diesel Range Organics (DRO)	6.774	mg/L	1.0	135	74	157			
Sample ID: JC #3		LCS			Batch ID:	13697	Analysis Da	te: 8/31	/2007 1:34:09 PM
Diesel Range Organics (DRO)	6.529	mg/L-	1.0	131	74	157			
Sample ID: JC #4		LCS			Batch ID:	13697	Analysis Da	te: 8/31	/2007 2:06:01 PM
Diesel Range Organics (DRO)	5.821	mg/L	1.0	116	74	157			
Sample ID: LCS-13697		LCS			Batch ID:	13697	Analysis Da	ite: 9/2	/2007 2:05:45 AM
Diesel Range Organics (DRO)	6.400	ma/l	1.0	128	74	157			
Sample ID: 1 CSD-13697	0.100	LCSD	1.0	120	Batch ID:	13697	Analysis Da	ate: 8/31	12007 6-18-47 AN
	0.070	2000	4.0	100		10001		. 0/07	12001 0.10.47 100
Diesel Range Organics (DRO)	6.970	mg/L	1:0	139	74	157	2.30	23	
Sample ID: LCSD-13697		LCSD			Batch ID:	13697	Analysis Da	te: 9/2	/2007 2:36:45 AM
Diesel Range Organics (DRO)	5.985	mg/L	1.0	120	74	157	6.70	23	
Method: SW8015									
Sample ID: B		MBLK			Batch ID:	R24905	Analysis Da	nte: 8/24	/2007 6:25:38 PM
Gasolino Paugo Organics (GPO)	ND	ma/l	0.050						
Sample ID: 2 5HG GRO LCS B		I C.S	0.000		Batch ID:	R24905	Analysis Da	ate: 8/25/	2007 11:32:52 PM
Gasoline Range Organics (GRO)	0.4954	mg/L	0.050	94.7	80	115	, and yold De	ite. Grzon	2007 11.02.02 1.00
	····· •···	·····					······		
Method: SW8021	•					D04005			
Sample ID: 5ML RB		MBLK			Batch ID:	R24905	Analysis Da	ate: 8/24/	2007 10:01:20 AW
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	hð\r	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		LCS			Batch ID:	R24905	Analysis Da	ate: 8/24/	2007 11:31:32 AM
Methyl tert-butyl ether (MTBE)	18.11	µg/L	2.5	90.6	51.2	138			
Benzene	17.89	µg/L	1.0	89.4	85.9	-113			
Toluene	17.92	µg/L	1.0	89.6	86.4	113			
Ethylbenzene	18.15	µg/L	1.0	90.3	83.5	118			
Xylenes, Total	54.67	µg/L	2.0	90.5	83.4	122			
0				• • • •		4			
Qualifiers:			1.1	E1 511		da sa			
E. value above quantitation range	ge Godon Nation		LI VI VI	riolding	g times for preparat	iion or analys	as exceeded		
R RPD outside accepted recove	ry limits		S S	Snike w	movery outside act 5	ong Limit cepted recove	ry limits		Page 1
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## **QA/QC SUMMARY REPORT**

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San Juan Refining River Terrace - 3rd Qtr-2007

Work Order: 0708308

Analyte	Result	Units	PQL	%Rec	LowLimit Hig	ghLimit	%RPD RP	DLimit Qual
Method: SW7470								
Sample ID: MB-13768		MBLK			Batch ID:	13768	Analysis Date:	9/6/2007 3:19:47 PM
Mercury	ND	mg/L	0.00020					
Sample ID: LCS-13768		LCS			Batch ID:	13768	Analysis Date:	9/6/2007 3:21:32 PM
Mercury	0.004954	mg/L	0.00020	99.1	80 1	20		
Method: SW6010A								
Sample ID: MB-13788		MBLK			Batch ID:	13788	Analysis Date:	9/10/2007 8:41:34 AM
Lead	ND	mg/L	0.0050					
Sample ID: MB-13788		MBLK			Batch ID:	13788	Analysis Date:	9/11/2007 1:29:23 PM
Lead	ND	mg/L	0.0050					
Sample ID: LCS-13788		LCS			Batch ID:	13788	Analysis Date:	9/10/2007 8:44:36 AM
Lead	0.5129	mg/L	0.0050	103	80 1	120		
Sample ID: LCS-13788		LCS			Batch ID:	13788	Analysis Date:	9/11/2007 12:02:04 PM
Lead	0.5014	mg/L	0.0050	100	80 1	120		





E Value above quantitation range

J Analyte detected below quantitation limits

RPD outside accepted recovery limits R

ND

H

Not Detected at the Reporting Limit

Holding times for preparation or analysis exceeded

Snike recovery outside accepted recovery limits S 14/15

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Hall Environment	al Analysis Laboratory, Inc.			:			
	Sample	Rece	eiot Ch	ecklist			
Client Name SJR			inpr on	Date and Tim	ne Received:		8/23/2007
Work Order Number 070	18308			Received b	by ARS		
Checklist completed by	gradure MUG		8( Date	23/07	· · · · · · · · · · · · · · · · · · ·		
Matrix	Carrier name	<u>Grey</u>	hound				
Shipping container/cooler	in good condition?	Yes	<b>~</b>	No 🗔	Not Present		
Custody seals intact on st	nipping container/cooler?	Yes		No	Not Present		Not Shipped
Custody seals intact on sa	ample bottles?	Yes	$\square$	No 🗹	N/A		· · · ·
Chain of custody present	?	Yes	V	No			
Chain of custody signed v	when relinquished and received?	Yes	~	No			
Chain of custody agrees	with sample labels?	Yes	$\checkmark$	No			
Samples in proper contain	ner/bottle?	Yes	$\checkmark$	No			
Sample containers intact	?	Yes		No 🗌			
Sufficient sample volume	for indicated test?	Yes	$\checkmark$	No 🗌			
All samples received with	in holding time?	Yes	$\checkmark$	No 🗌			
Water - VOA vials have z	ero headspace? No VOA vials sub	mitted		Yes 🗹	No	]	
Water - Preservation labe	els on bottle and cap match?	Yes		No 🗔	. N/A	]	
Water - pH acceptable up	oon receipt?	Yes	$\checkmark$	No l_j	N/A L	]	
Container/Temp Blank te	mperature?		4°	4° C ± 2 Accep	ptable		
COMMENTS:				n gitten tamen			
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Client contacted	Date contacted.	• •	· · · ·	··· ··· Pi	erson contacted		
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Comments:							
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COVER LETTER

Tuesday, September 18, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX: (505) 632-3911

RE: River Terrace  $-3^{rd}$  Qtr 2007

Order No.: 0708272

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 9 samples on 8/21/07 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab #9425 AZ License #AZ0682 ORELAP Lab #NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com
#### Date: 18-Sep-07

CLIENT: San Juan Refining Client Sample ID: TP-#2 Lab Order: 0708272 Collection Date: 8/20/2007 10:40:00 AM Project: River Terrace - 3rd Qtr-2007 Date Received: 8/21/2007 Matrix: AQUEOUS Lab ID: 0708272-01 PQL Qual Units Analyses Result ĐF **Date Analyzed** EPA METHOD 8015B: DIESEL RANGE Analyst: SCC 1.0 9/1/2007 3:36:52 PM Diesel Range Organics (DRO) 1.0 mg/L 1 9/1/2007 3:36:52 PM Motor Oil Range Organics (MRO) ND 5.0 mg/L 1 Surr: DNOP 127 %REC 9/1/2007 3:36:52 PM 58-140 1 EPA METHOD 8015B: GASOLINE RANGE Analyst: SMP Gasoline Range Organics (GRO) 28 1.0 mg/L 20 8/23/2007 5:10:28 PM Surr: BFB 122 79.2-121 %REC 20 8/23/2007 5:10:28 PM S EPA METHOD 8021B: VOLATILES Analyst: SMP ND 50 20 8/23/2007 5:10:28 PM Methyl tert-butyl ether (MTBE) µg/L Benzene 640 20 µg/L 20 8/23/2007 5:10:28 PM ND 20 µg/L 20 8/23/2007 5:10:28 PM Toluene Ethylbenzene 2000 20 µg/L 20 8/23/2007 5:10:28 PM 4800 200 100 8/22/2007 11:44:18 PM Xylenes, Total µg/L 8/23/2007 5:10:28 PM 103 70.2-105 %REC 20 Surr: 4-Bromolluorobenzene Analyst: TES EPA 6010B: TOTAL RECOVERABLE METALS 9/6/2007 4:00:26 PM 0.019 0.0050 1 Lead mg/L

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

5 Spike recovery outside accepted recovery limits 1/14

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 18-Sep-07

CLIENT:	San Juan Refining			Client Sample ID:	TP-#1	
Lab Order:	0708272			Collection Date:	8/20/20	007 11:05:00 AM
Project:	River Terrace - 3rd Qtr-2	2007		Date Received:	8/21/20	007
Lab ID:	0708272-02			Matrix:	AQUE	OUS
Analyses		Result	PQL Qua	l Units	DF	Date Analyzed
EPA METHOD 80	15B: DIESEL RANGE					Analyst: SCC
Diesel Range Org	anics (DRO)	3.3	1.0	mg/L	1	9/1/2007 4:08:26 PM
Motor Oil Range (	Drganics (MRO)	ND	5.0	mg/L	1	9/1/2007 4:08:26 PM
Surr: DNOP		129	58-140	%REC	1	9/1/2007 4:08:26 PM
EPA METHOD 80	15B: GASOLINE RANGE	Ξ				Analyst: SMP
Gasoline Range (	Drganics (GRO)	80	5.0	mg/L	100	8/23/2007 12:16:51 AM
Surr: BFB		114	79.2-121	%REC	100	8/23/2007 12:16:51 AM
EPA METHOD B	21B: VOLATILES					Analyst: SMP
Methyl tert-butyl e	liher (MTBE)	ND	250	µg/L	100	8/23/2007 12:16:51 AM
Benzene		1200	100	μg/L	100	8/23/2007 12:16:51 AM
Toluene		ND	100	hð\r	100	8/23/2007 12:16:51 AM
Ethylbenzene		4200	100	µg/L	100	8/23/2007 12:16:51 AM
Xylenes, Total		20000	400	µg/L	200	8/23/2007 6:10:23 PM
Surr: 4-Bromol	luorobenzene	100	70.2-105	%REC	100	8/23/2007 12:16:51 AM
EPA 6010B: TOT	AL RECOVERABLE ME	TALS				Analyst: TES
Lead		0.074	0.0050	mg/L	1	9/6/2007 4:04:38 PM

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Qualifiers:	٠	Value exceeds Maximum Contaminant Level	В	Analyte detected in the associated Method Blank
	E	Value above quantitation range	11	Holding times for preparation or analysis exceeded
	· ]	Analyte detected below quantitation limits	MCI.	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	Ś	Spike recovery outside accepted recovery limits 2 /	14	



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Date:	18-Sep-	07
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CLIENT:	San Juan Refining			C	lient Sample ID:	TP-#8	
Lab Order:	0708272				Collection Date:	8/20/200	7 12:50:00 PM
Project:	River Terrace - 3rd Qtr-	2007			Date Received:	8/21/200	)7
Lab ID:	0708272-03				Matrix:	AQUEC	US
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8	15B: DIESEL RANGE						Analyst: SCC
Diesel Range Org	anics (DRO)	1.7	1.0		mg/L	1	9/1/2007 4:40:02 PM
Motor Oil Range	Organics (MRO)	ND	5.0		mg/L	1	9/1/2007 4:40:02 PM
Surr: DNOP		130	58-140		%REC	1	9/1/2007 4:40:02 PM
EPA METHOD B	15B: GASOLINE RANG	E					Analyst: SMP
Gasoline Rarige	Organics (GRO)	31	0.50		mg/L	10	8/24/2007 5:20:16 PM
Surr: BFB		126	79.2-121	S	%REC	10	8/24/2007 5:20:16 PM
EPA METHOD 8	021B: VOLATILES						Analyst: SMP
Methyl tert-bulyl	ether (MTBE)	ND	25		µg/L	10	8/24/2007 5:20:16 PM
Benzene		ND	10		µg/L	10	8/24/2007 5:20:16 PM
Toluene		ND	10		µg/L	10	8/24/2007 5:20:16 PM
Ethylbenzene		480	10		µg/L	10	8/24/2007 5:20:16 PM
Xylenes, Total		3700	100		µg/L	50	8/24/2007 4:47:39 PM
Surr: 4-Bromo	luorobenzene	94.4	70.2-105		%REC	50	8/24/2007 4:47:39 PM
EPA 6010B: TO	TAL RECOVERABLE ME	TALS					Analyst: TES
Lead		0.027	0.0050		mg/L	1	9/6/2007 4:08:43 PM

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits 3/14

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 18-Sep-07

CLIENT:	San Juan Refining			C	lient Sample ID:	TP-#{	3 FD
Lab Order:	0708272				<b>Collection Date:</b>	8/20/2	2007 1:05:00 PM
Project:	River Terrace - 3rd Qu	r-2007			Date Received:	8/21/2	2007
Lab ID:	0708272-04				Matrix:	AQU	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC
Diesel Range C	Drganics (DRO)	2.2	1.0		mg/L	1	9/1/2007 5:11:39 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L	1	9/1/2007 5:11:39 PM
Surr: DNOP		131	58-140		%REC	1	9/1/2007 5:11:39 PM
EPA METHOD	8015B: GASOLINE RANG	GE					Analyst: SMP
Gasoline Rang	e Organics (GRO)	12	0.50		mg/L	10	8/27/2007 11:34:28 AM
Surr: BFB		122	79.2-121	S	%REC	10	8/27/2007 11:34:28 AM
EPA METHOD	8021B: VOLATILES						Analyst: SMP
Methyl tert-buty	/l elher (MTBE)	ND	25		µg/L	10	8/27/2007 11:34:28 AM
Benzene		ND	10		µg/L	10	8/27/2007 11:34:28 AM
Toluene		ND	10		μg/L	10	8/27/2007 11:34:28 AM
Elhylbenzene		230	10		µg/L	10	8/27/2007 11:34:28 AM
Xylenes, Total		1500	20		μg/L	10	8/27/2007 11:34:28 AM
Surr: 4-Brom	olluorobenzene	106	70.2-105	S	%REC	10	B/27/2007 11:34:28 AM
EPA 6010B: T	OTAL RECOVERABLE M	ETALS					Analyst: TES
Lead		0.030	0.0050		mg/L	1	9/6/2007 4:12:49 PM

Qualifiers:

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Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S – Spike recovery outside accepted recovery limits -4/14

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Date: 18-Sep-07

CLIENT:	San Juan Refining			Client Sample ID:	MW#49	
Lab Order:	0708272			Collection Date:	8/20/200	)7 1:40:00 PM
Project:	River Terrace - 3rd Qtr	-2007		Date Received:	8/21/200	) 7
Lab ID:	0708272-05			Matrix:	AQUEC	US .
Analyses		Result	PQL Qua	I Units	DF	Date Analyzed
EPA METHOD 8	015B: DIESEL RANGE					Analyst: SCC
Diesel Range Or	ganics (DRO)	ND	1.0	mg/L	1	9/1/2007 5:43:14 PM
Molor Oil Range	Organics (MRO)	ND	5.0	mg/L	1	9/1/2007 5:43:14 PM
Surr: DNOP		133	58-140	%REC	1	9/1/2007 5:43:14 PM
EPA METHOD 8	015B: GASOLINE RANG	E				Analyst: SMP
Gasoline Range	Organics (GRO)	ND	0.050	mg/L	1	8/23/2007 1:52:06 AM
Surr: BFB		99.3	79.2-121	%REC	1	8/23/2007 1:52:06 AM
EPA METHOD 8	021B: VOLATILES					Analyst: SMP
Methyl tert-butyl	ether (MTBE)	ND	2.5	µg/L	1	8/23/2007 1:52:06 AM
Benzene		ND	1.0	μg/L	1	8/23/2007 1:52:06 AM
Toluene		ND	1.0	µg/L	1	8/23/2007 1:52:06 AM
Ethylbenzene		ND	1.0	µg/L	1	8/23/2007 1:52:06 AM
Xylenes, Total		ND	2.0	hð\r	1	8/23/2007 1:52:06 AM
Surr: 4-Bromo	ofluorobenzene	84.3	70.2-105	%REC	1	8/23/2007 1:52:06 AM
EPA 6010B; TO	TAL RECOVERABLE ME	ETALS				Analyst: TES
Lead		ND	0.0050	mg/L	1	9/6/2007 4:21:55 PM

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S – Spike recovery outside accepted recovery limits – 5 / 14

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level RL Reporting Limit

Date: 18-Sep-07

Analyses	Result	PQL Qual Units	DF Date Analyzed
Lab ID:	0708272-06	Matrix:	AQUEOUS
Project:	River Terrace - 3rd Qir-2007	Date Received:	8/21/2007
Lab Order:	0708272	Collection Date:	8/20/2007 1:45:00 PM
CLIENT:	San Juan Refining	Client Sample ID:	Field Blank

EPA METHOD 8015B: GASOLINE RAN	GE				Analyst: SMP
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/23/2007 2:51:55 AM
Surr: BFB	98.3	79.2-121	%REC	1	8/23/2007 2:51:55 AM
EPA METHOD 8021B: VOLATILES					Analyst: SMP
Methyl tert-butyl ether (MTBE)	ND	2.5	μg/L	1	8/23/2007 2:51:55 AM
Benzene	ND	1.0	µg/L	1	8/23/2007 2:51:55 AM
Toluene	ND	1.0	μg/L	1	8/23/2007 2:51:55 AM
Elhylbenzene	ND	1.0	µg/L	1	8/23/2007 2:51:55 AM
Xylenes, Total	ND	2.0	μg/L	1	8/23/2007 2:51:55 AM
Surr: 4-Bromofluorobenzene	83.4	70.2-105	%REC	·1	8/23/2007 2:51:55 AM

Qualifiers:

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Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits -6/14

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Date: 18-Sep-07

CLIENT:San Juan RefiningLab Order:0708272Project:River Terrace - 3rd Qtr-2007Lab ID:0708272-07

Client Sample 1D: TP-6 Collection Date: 8/20/2007 2:05:00 PM Date Received: 8/21/2007 Matrix: AQUEOUS

Analyses	Result	PQL Qua	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANG	GE				Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	9/1/2007 6:14:49 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	9/1/2007 6:14:49 PM
Surr: DNOP	128	58-140	%REC	1	9/1/2007 6:14:49 PM
EPA METHOD 8015B: GASOLINE RA	ANGE				Analyst: SMP
Gasoline Range Organics (GRO)	0.19	0.050	mg/L	1	8/23/2007 3:21:59 AM
Surr: BFB	108	79.2-121	%REC	1	8/23/2007 3:21:59 AM
EPA METHOD 8021B: VOLATILES			\$		Analyst: SMP
Methyl tert-butyl ether (MTBE)	ND	2.5	µg/L	1	8/23/2007 3:21:59 AM
Benzene	ND	1.0	ից/Լ	1	8/23/2007 3:21:59 AM
Toluene	ND	1.0	µg/L	1	8/23/2007 3:21:59 AM
Elhylbenzene	ND	1.0	μg/L	1	8/23/2007 3:21:59 AM
Xylenes, Total	ND	2.0	µg/L	1	8/23/2007 3:21:59 AM
Surr: 4-Bromofluorobenzene	90.6	70.2-105	%REC	1	8/23/2007 3:21:59 AM
EPA 6010B: TOTAL RECOVERABLE	EMETALS				Analyst: TES
Lead	0.0093	0.0050	mg/L	1	9/6/2007 4:24:57 PM

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 7/14
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 18-Sep-07

Lub Order:	San Juan Kelining	Chent Sample ID:	11-5
Lab (huer.	0703272	Collection Date:	872072007-2:40:00 PM
Project:	River Terrace - 3rd Qtr-2007	Date Received:	8/21/2007
Lab ID:	0708272-08	Matrix:	AQUEOUS
Analyses	Result	PQL Qual Units	DF Date Analyzed

•					·····
EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	9/1/2007 6:46:24 PM
Molor Oil Range Organics (MRO)	ND	5.0	mg/L	7	9/1/2007 6:46:24 PM
Surr: DNOP	131	58-140	%REC	1	9/1/2007 6:46:24 PM
EPA METHOD 8015B; GASOLINE RANG	SE .				Analyst: SMP
Gasoline Range Organics (GRO)	69	. 2.5	mg/L	50	8/23/2007 3:54:40 AM
Surr: BFB	118	79.2-121	%REC	50	8/23/2007 3:54:40 AM
EPA METHOD 8021B: VOLATILES					Analyst: SMP
Melhyl tert-butyl ether (MTBE)	ND	120	μg/L	50	8/23/2007 3:54:40 AM
Benzene	300	50	hð\r	50	8/23/2007 3:54:40 AM
Toluene	ND	50	µg/L	50	8/23/2007 3:54:40 AM
Elhylbenzene	3000	50	µg/L	50	8/23/2007 3:54:40 AM
Xylenes, Totał	22000	400	µg/L	200	8/24/2007 4:14:58 PM
Surr: 4-Bromolluorobenzene	104	70.2-105	%REC	50	8/23/2007 3:54:40 AM
EPA 6010B: TOTAL RECOVERABLE ME	ETALS				Analyst: TES
Lead	0.044	0.0050	mg/L	1	9/6/2007 4:27:51 PM

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 8 / 14
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

#### Date: 18-Sep-07

CLIENT:San Juan RefiningLab Order:0708272Project:River Terrace - 3rd Qtr-2007Lab ID:0708272-09

Client Sample ID: Trip Blank Collection Date: Date Received: 8/21/2007 Matrix: TRIP BLANK

Analyses	Result	PQL Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE					Analyst: SMP
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	8/23/2007 4:24:40 AM
Surr: BFB	101	79.2-121	%REC	. 1	8/23/2007 4:24:40 AM
EPA METHOD 8021B: VOLATILES					Analyst: SMP
Methyl tert-butyl ether (MTBE)	ND	2.5	µg/L	1	8/24/2007 3:44:53 PM
Benzene	ND	1.0	µg/L	1	8/24/2007 3:44:53 PM
' Toluene	ND	1.0	μg/L	1	8/24/2007 3:44:53 PM
Ethylbenzene	NĎ	1.0	μg/L	1	8/24/2007 3:44:53 PM
Xylenes, Total	ND	2.0	ից/լ	1	8/24/2007 3:44:53 PM
Surr: 4-Bromofluorobenzene	83.6	70.2-105	%REC	1	8/24/2007 3:44:53 PM

Qualifiers:

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- Value exceeds Maximum Comaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S – Spike recovery outside accepted recovery limits -9/14

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

6.300

mg/L

1.0

126

74

157

6.93

23

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### QA/QC SUMMARY REPORT

Client:

San Juan Refining

Project: River Terrace	e - 3rd Qtr-	2007					Work	Order: 0708272
Analyle	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RF	DLimit Qual
Method: SW8015 Sample ID: MB-13694		MBLK			Batch II	D: 13694	Analysis Date:	8/28/2007 313:26 PM
Diesel Range Organics (DRO) Motor Oil Range Organics (MRO)	ND ND	mg/L mg/L	1.0 5.0					
Sample ID: MB-13694 Diesel Range Organics (DRO) Motor Oil Range Organics (MRO)	ND ND	MBLK mg/L mg/L	1.0 5.0		Baich II	D: 13694	Analysis Dale:	8/30/2007 512:49 PM
Sample ID: MB-13694 Diesel Range Organics (DRO) Motor Oil Range Organics (MRO)	ND	MBLK mg/L mg/l	1.0 5.0		Balch IC	D: 13694	Analysis Date:	9/1/2007 2.00:39 PM
Sample ID: LCS-13694 Diesel Range Organics (DRO)	6.735	LCS mg/L	1.0	135	Batch IE 74	D: <b>13694</b> 157	Analysis Date:	8/28/2007 3:49:35 PM
Sample ID: LCS-13694 Diesel Range Organics (DRO)	7.466	LCS mg/L	1.0	149	Balch II 74 Balch II	D: 13694 157	Analysis Date:	B/30/2007 5:44:23 PM
Diesel Range Organics (DRO) Sample ID: LCSD-13694	5,878	mg/L LCSD	1.0	118	74 Batch I	157 D: 13694	Analysis Date:	8/28/2007 4:25:47 PM
Diesel Range Organics (DRO) Sample ID: LCSD-13694	7.021	mg/L LCSD	1.0	140	74 Batch 1[	157 D: <b>13694</b>	4.15 Analysis Date:	23 8/30/2007 6:15:59 PM
Diesel Range Organics (DRO) Sample ID: LCSD-13694	6.595	mg/L LCSD	1.0	132	74 Batch II	157 D: 13694	12.4 Analysis Date:	23 9/1/2007 3:05:03 PM

Qualifiers:

E Value above quantitation range

Diesel Range Organics (DRO)

1 Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

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ND Not Detected at the Reporting Limit

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Page 1

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Client:

: San Juan Refining :t: River Terrace - 3rd Qtr-2007

Project: River Terrace - 3rd Qtr-2007						Wor	Order: 0708272
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RF	PDLimit Qual
Method: SW8015 Sample ID: 5ML RB		MBLK			Batch ID: R24885	Analysis Date:	8/23/2007 910:07 AM
Gasoline Range Organics (GRO) Sample ID: B	ND	mg/L MBLK	0.050		Batch ID: R24905	Analysis Date:	8/24/2007 6:25:38 PM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	ND	mg/L <i>MBLK</i>	0.050		Batch ID: R24919	Anatysis Date:	8/27/2007 1001:29 AM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	ND	mg/L MBLK	0.050		Batch ID: R24937	Analysis Date:	8/27/2007 2:00:37 PM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	ND	mg/L MBLK	0.050		Batch ID: R24916	Analysis Date:	8/24/2007 2:21:10 PM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	ND	mg/L MBLK	0.050		Batch ID: R24869	Analysis Date:	8/22/2007 1046:52 AM
Gasoline Range Organics (GRO) Sample ID: 5mL rb 1	ND	mg/L MBLK	0.050		Batch ID: R24847	Analysis Date:	8/21/2007 12:53:28 PM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	ND	mg/L MBLK	0.050		Balch ID: R24886	Analysis Date:	8/23/2007 12:16:03 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	ND	mg/L LCS	0.050		Batch ID: R24885	Analysis Date:	8/23/2007 3:37:51 PM
Gasoline Range Organics (GRO) Sample ID: 2,5UG GRO LCS B	0.4696	mg/L LCS	0.050	90.6	80 115 Baich ID: R24905	Analysis Date:	8/25/2007 11:32:52 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0.4954	mg/L LCS	0.050	94.7	80 115 Batch ID: R24919	Analysis Date:	8/27/2007 6:39:05 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0.5258	mg/L LCS	0.050	100	80 115 Batch ID: R24847	Analysis Date:	8/21/2007 1:54:46 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0.4560	mg/L LCS	0.050	86.8	80 115 Batch ID: R24869	Analysis Date:	8/22/2007 11:47:53 AM
Gasoline Range Organics (GRO) Sample ID: 2.25UG GRO LCS	0.4700	mg/L LCS	0.050	89.6	80 115 Batch ID: R24886	Analysis Date:	8/23/2007 1:17:08 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0.4580	mg/L LCS	0.050	91.6	80 115 Batch ID: R24916	Analysis Date:	8/24/2007 3:22:28 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0.4700	mg/L LCS	0.050	89.6	80 115 Batch ID: R24937	Analysis Date	8/27/2007 3:01:49 PM
Gasoline Range Organics (GRO)	0.4600	mg/L	0.050	88.0	80 115		

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

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ND Not Detected at the Reporting Limit

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### QA/QC SUMMARY REPORT

Client: San Juan Ref Project: River Terrace	ining e - 3rd Qtr-	2007					Wo	rk Order: 0708272
Analyte	Result	Units	PQL	%Rec	LowLimit H	lighLimit	%RPD F	PDLimit Qual
Method: SW8021				<u> </u>	<del></del> _*****			
Sample ID: 5ML RB		MBLK			Batch ID	: R24885	Analysis Date	: 8/23/2007 910:07 AM
Methyl terl-bulyl ether (MTBE)	ND	ua/L	2.5					
Benzene	ND	μα/L	1.0					
Toluene	ND	μg/L	1.0					
Ethylbenzene	ND	, µg/L	1.0					
Xylenes, Tolal	ND	µg/L	2.0					
Sample ID: 5ML RB		MBLK			Batch ID	: R24905	Analysis Date	: 8/24/2007 1001:20 AM
MelbyLtert-butyLether (MTRE)	ND	un/l	2.5					
Renzene	ND	pg/2	1.0					
Тоциере	ND	µg/L	1.0					
Ethylhenzene	ND	μg/2 μg/l	1.0					
Xylenes Total	ND	pg/c	2.0					
Sample ID: 5ML BB	ND	MRLK	2.0		Batch ID	824919	Analysis Date	- 8/27/2007 1001-29 AM
Sample IS. SME KO			0.5		Datarib	. 112-515	Analysis Dere	
Methyl tert-bulyl ether (MTBE)	ND	µg/L	2.5					
Benzene	ND	µg/L	1,0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: 100NG BTEX LCS		LCS			Batch ID	: R24885	Analysis Date	e: 8/23/2007 2:37:33 PN
Methyl tert-bulyl ether (MTBE)	19.11	μg/L	2.5	95.6	51.2	138		
Benzene	17.77	µg/L	1.0	88.9	85.9	113		
Toluene	17.37	µg/L	1.0	86.9	86.4	113		
Ethylbenzene	18.05	µg/L	1.0	90.2	83.5	118		
Xylenes, Tolal	54.72	µg/L	2.0	90.9	83.4	122		
Sample ID: 100NG BTEX LCS		LCS			Batch ID	: R24905	Analysis Date	: 8/24/2007 11:31:32 AN
Methyl terl-bulyl ether (MTBE)	18,11	ua/L	2.5	90.6	51.2	138		
Benzene	17.89	ua/L	1.0	89,4	85.9	113		
Toluene	17.92	ua/L	1.0	89.6	86.4	113		
Elhvibenzene	18.15	ua/L	1.0	90.3	83.5	118		
Xvienes, Tolal	54.67	и <b>а</b> /Ц	2.0	90.5	83.4	122		
Sample ID: 100NG BTEX LCS	-	LCS			Batch ID	): R24919	Analysis Date	: 8/27/2007 6:06:58 PM
Motivul tort build other (MTRE)	10 00		25	95 d	517	130	,	
	19.00	μg/L μg/L	10	05.9	85.0	112		
Toluono	10.04 10.00	µg/L	1.U 1.D	100	86 4	113		
Fluthograph	20.03	µg/L ua/l	1.0	100	83.5	118		
Lunyidenzede Xulonos Total	20.40 67 75	hður Noll	י.ט מינ	102	83 A	122		
Ayiches, IUM Sample ID: 1000C PTEVICED	02.30	μy/L I C C D	2.0	104	Rates II	)- 1224885	Analysis Data	
Sample ID. TOURS BIEA LOSD							- ar-	
Methyl tert-butyl ether (MTBE)	19.24	րց/Լ	2.5	96.2	51.2	138	0.688	28
Benzene	18.32	μg/L	1.0	91.6	85.9	113	3.04	27
Toluene	18.12	μg/L	1.0	90.6	86.4	113	4.23	19
Ethylbenzene	18.75	μg/L	1.0	93.7	83.5	118	3.81	10
Xylenes, Total	56.41	µg/L	2.0	93.7	83.4	122	3.04	13

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Page 3

Client: San Ju	an Refining							
Project: River	Ferrace - 3rd Qtr-	2007					Work	Order: 0708272
Analyle	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RP	DLimit Qual
Method: SW8260B	······································							
Sample ID: 5ml rb		MBLK			Batch I	D: R24875	Analysis Date:	8/22/2007 10:33:28 AM
Benzene	ND	hð\r	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	ից/Լ	1.0					
Xylenes, Total	ND	µg/L	3.0					
Sample ID: 100ng lcs		LCS			Batch	ID: R24875	Analysis Date:	8/22/2007 11:40:20 AM
Benzene	19,57	µg/L	1.0	97.9	82.4	128	Ì	
Toluene	19.11	µg/L	1.0	95.6	77.2	115		
Method: SW8260B								
Sample ID: 5ml rb-II		MBLK			Batch	ID: R24875	Analysis Date:	8/22/2007 10:38:08 PM
Benzene	ND	hd/r	1.0					
Toluene	ND	hd\r	1.0					
Ethylbenzene	ND	µg/L	1.0					
Tetrachloroethene (PCE)	ND	μg/L	1.0					
Xylenes, Total	ND	µg/L	1.5					
Sample ID: 100ng lcs-II		LCS			Batch	ID: R24875	Analysis Date:	8/23/2007 12:52:04 AM
Benzene	19.01	µg/L	1.0	95.0	B2.4	128		
Toluene	18.72	µg/L	1.0	93.6	77.2	115		
Method: SW8260B								
Sample ID: 5mL rb		MBLK			Batch	ID: R24888	Analysis Date:	8/23/2007 10:57:01 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xyleries, Total	ND	μg/L	3.0				1	
Sample ID: 100ng lcs		LCS			Batch	ID: R24888	3 Analysis Date:	8/23/2007 12:15:05 PM
Benzene	19.33	μg/L	1.0	96.6	82.4	128		
Toluene	18.78	μg/L	1.0	93.9	77.2	115		
Method: SW8260B								
Sample ID: 5mL rb		MBLK			Batch	ID: R24888	B Analysis Date:	8/23/2007 10:57:01 AM
Benzene	ND	µg/L	1.0					
Taluene	ND	րը/լ	1.0					
Elhylbenzene	ND	µg/L	1.0					
Tetrachloroethene (PCE)	ND	JJG/L	1.0					
Xylenes, Total	ND	µg/L	1.5					
Sample ID: 100ng lcs		LCS			Batch	ID: R2488	8 Analysis Date:	8/23/2007 12:15:05 PM
Benzene	19.33	µg/L	1.0	96.6	82.4	128		
Toluene	18.78	µg/L	1.0	93.9	77.2	115		
Benzene Toluene	18.78	hð\r hð\r	1.0	93.9	77.2	115		



Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

<sup>5</sup> 13/14<sup>invery outside accepted recovery limits</sup>

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Client: Project:	San Juan Re River Terrac	fining ce - 3rd Qtr-	2007					Work Order: 0708272				
Analyte		Result	Units	POL	%Rec	LowLimit H	HighLimit	%RPD RPI	DLimit Qual			
Method: SW Sample ID: 07	6010A 08272-08B MSD		MSD			Batch ID	: 13757	Analysis Date:	9/6/2007 6:19:48 PM			
Lead Sample ID: Mi	B-1 <b>375</b> 7	0.5203	mg/L MBLK	0.0050	95.2	75 Batch ID	125 : 13757	7.18 24 Analysis Date:	0 9/6/2007 354:12 PM			
Lead Sample ID: EC	CS-13757	ND	mg/L LCS	0.0050		Batch ID	): 13757	Analysis Date:	9/6/2007 3:57:14 PM			
Lead Sample ID: 07	708272-08B MS	0.4854	mg/L MS	0.0050	97.1	80 Batch ID	120 ): <b>1375</b> 7	Analysis Date:	9/6/2007 6:16:47 PM			
Lead		0.5591	mg/L	0.0050	103	75	125					

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Suite recovery builde accepted recovery limits 14 / 14

Page 4

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D	Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com			or N) 182)	,,09 , 08) 2'	edspee (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	DZ bor DB bor (9 ro A slass dov, NC (AO (AO (AO (AO (AO (AO) (AO) (AO) (AO)	139(M) 8 (Met) 70 (Pu) 81 Pesi 81 Pesi 81 Pesi 70 (Ser 70 (Ser	EDI 83 83 80 80 80 80 80 80 80 80 80 80 80 80 80		×						×		×		CH analyze to MTRE/	8/21/07	
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DA/ OC Package: Std 🗖 Level 4 🕅 Other:	Project Name: River Terrace 3rd ar-2007	Project #:		Project Mapager:	Cinda Hortzalo	Saturday Alurtado/ Bab Kralcow	Sample Témperature: / S	Preservative HEAL No.	Hg612 HN03 C708272	4-VOA     He -1	1-1 X 025/	4-VOA HE4 - 2 1	1-520 X -2	4-104 [4-13]	E- X 0001	4-Vor Ha -4 1	1-520 X - 4	X 5- 774 +07-7	1-Sub X -S	3-604 Hee - 6 X	Received By, (Signature)	Received By: (Signature) '3/2// 67	500/
CHAIN-OF-CUSTODY AECORD	Client: SAN Juan Rehmens	Address: #50 Rd 4990	Eloom Full, NM	87413		Phone #: 505-632.416/	Fax #: 5DS-637- 2911	Date Time Matrix Sample I.D. No.		8/267 (1040A HZD 7P-# 2		111054 TP-#1		1250 7P-#8		A Spend TP=#8 FD		Klopm NW#49		145pm Field Blank	Date; Time: Relinduished By: (Signature)	Date Time: Relinquished By: (Signature)	-

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#### COVER LETTER

Wednesday, November 14, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace 4th Qtr 2007 .

Dear Cindy Hurtado:

Order No.: 0710548

Hall Environmental Analysis Laboratory, Inc. received 9 sample(s) on 10/30/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Ø Fax 505.345.4107 www.hallenvironmental.com

Date: 14-Nov-07

CLIENT: Project: Lab Order:	San Juan Refining River Terrace 4th Qt 0710548	r 2007	Work Order	Sample Summary
Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0710548-01A	TP-2	R25852	EPA Method 8015B: Gasoline Range	10/29/2007 9:50:00 AM
0710548-01A	TP-2	R25871	EPA Method 8021B: Volatiles	10/29/2007 9:50:00 AM
0710548-01A	TP-2	R25871	EPA Method 8015B: Gasoline Range	10/29/2007 9:50:00 AM
0710548-01A	TP-2	R25907	EPA Method 8021B: Volatiles	10/29/2007 9:50:00 AM
0710548-01A	TP-2	R25907	EPA Method 8015B: Gasoline Range	10/29/2007 9:50:00 AM
0710548-01A	TP-2	14307	EPA Method 8015B: Diesel Range	10/29/2007 9:50:00 AM
0710548-01A	TP-2	R25852	EPA Method 8021B: Volatiles	10/29/2007 9:50:00 AM
0710548-01B	TP-2	14361	EPA 6010B: Total Recoverable Metals	10/29/2007 9:50:00 AM
0710548-02A	TP-1	R25871	EPA Method 8015B: Gasoline Range	10/29/2007 10:15:00 AM
0710548-02A	TP-1	14307	EPA Method 8015B: Diesel Range	10/29/2007 10:15:00 AM
071054 <b>8-</b> 02A	TP-1	R25907	EPA Method 8015B: Gasoline Range	10/29/2007 10:15:00 AM
071054 <b>8-</b> 02A	TP-1	R25907	EPA Method 8015B: Gasoline Range	10/29/2007 10:15:00 AM
0710548-02A	TP-1	R25907	EPA Method 8021B: Volatiles	10/29/2007 10:15:00 AM
0710548-02A	TP-1	R25871	EPA Method 8021B: Volatiles	10/29/2007 10:15:00 AM
071054 <b>8-</b> 02A	TP-1	R25852	EPA Method 8015B: Gasoline Range	10/29/2007 10:15:00 AM
0710548-02A	TP-1	R25852	EPA Method 8021B: Volatiles	10/29/2007 10:15:00 AM
0710548-02A	TP-1	R25907	EPA Method 8021B: Volatiles	10/29/2007 10:15:00 AM
071054 <b>8-</b> 02B	TP-1	14361	EPA 6010B: Total Recoverable Metals	10/29/2007 10:15:00 AM
0710548-03A	TP-6	R25852	EPA Method 8021B: Volatiles	10/29/2007 10:40:00 AM
0710548-03A	TP-6	R25852	EPA Method 8015B: Gasoline Range	10/29/2007 10:40:00 AM
0710548-03A	TP-6	R25871	EPA Method 8021B: Volatiles	10/29/2007 10:40:00 AM
0710548-03A	TP-6	<b>R2587</b> 1	EPA Method 8015B: Gasoline Range	10/29/2007 10:40:00 AM
0710548-03A	TP-6	14307	EPA Method 8015B: Diesel Range	10/29/2007 10:40:00 AM
0710548-03B	TP-6	14361	EPA 6010B: Total Recoverable Metals	10/29/2007 10:40:00 AM
0710548-04A	TP-8	R25852	EPA Method 8015B: Gasoline Range	10/29/2007 11:10:00 AM
0710548-04A	TP-8	R25852	EPA Method 8015B: Gasoline Range	10/29/2007 11:10:00 AM
0710548-04A	TP-8	14307	EPA Method 8015B: Diesel Range	10/29/2007 11:10:00 AM
0710548-04A	TP-8	R25852	EPA Method 8021B: Volatiles	10/29/2007 11:10:00 AM
0710548-04A	TP-8	R25852	EPA Method 8021B: Volatiles	10/29/2007 11:10:00 AM
0710548-04B	TP-8	14361	EPA 6010B: Total Recoverable Metals	10/29/2007 11:10:00 AM
0710548-05A	TP-8 FD	R25852	EPA Method 8021B: Volatiles	10/29/2007 11:15:00 AM
0710548-05A	TP-8 FD	R25852	EPA Method 8021B: Volatiles	10/29/2007 11:15:00 AM
0710548-05A	TP-8 FD	R25852	EPA Method 8015B: Gasoline Range	10/29/2007 11:15:00 AM
0710548-05A	TP-8 FD	R25852	EPA Method 8015B: Gasoline Range	10/29/2007 11:15:00 AM
0710548-05A	TP-8 FD	14307	EPA Method 8015B: Diesel Range	10/29/2007 11:15:00 AM
0710548-05B	TP-8 FD	14361	EPA 6010B: Total Recoverable Metals	10/29/2007 11:15:00 AM
0710548-06A	TP-5	R25852	EPA Method 8021B: Volatiles	10/29/2007 1:50:00 PM
0710548-06A	TP-5	14307	EPA Method 8015B: Diesel Range	10/29/2007 1:50:00 PM

1

CLIENT:San Juan RefiningProject:River Terrace 4th Qtr 2007Lab Order:0710548

### Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	<b>Collection Date</b>
0710548-06A	TP-5	R25852	EPA Method 8015B: Gasoline Range	10/29/2007 1:50:00 PM
0710548-06A	TP-5	R25852	EPA Method 8021B: Volatiles	10/29/2007 1:50:00 PM
0710548-06A	TP-5	R25852	EPA Method 8015B: Gasoline Range	10/29/2007 1:50:00 PM
0710548-06B	TP-5	14361	EPA 6010B: Total Recoverable Metals	10/29/2007 1:50:00 PM
0710548-07A	TP-9	R25852	EPA Method 8021B: Volatiles	10/29/2007 2:15:00 PM
0710548-07A	TP-9	R25852	EPA Method 8015B: Gasoline Range	10/29/2007 2:15:00 PM
0710548-07A	TP-9	14307	EPA Method 8015B: Diesel Range	10/29/2007 2:15:00 PM
0710548-07B	TP-9	14361	EPA 6010B: Total Recoverable Metals	10/29/2007 2:15:00 PM
0710548-08A	Field Blank	R25852	EPA Method 8021B: Volatiles	10/29/2007 2:30:00 PM
0710548-08A	Field Blank	R25852	EPA Method 8015B: Gasoline Range	10/29/2007 2:30:00 PM
0710548-08A	Field Blank	14307	EPA Method 8015B: Diesel Range	10/29/2007 2:30:00 PM
0710548-09A	TRIP BLANK	R25852	EPA Method 8015B: Gasoline Range	
0710548-09A	TRIP BLANK	R25852	EPA Method 8021B: Volatiles	

Page 2 of 2

CLIENT:	San Juan Refining			Cli	ient Sample ID:	TP-2	
Lab Order:	0710548			6	Collection Date:	10/29	2007 9·50·00 AM
Project:	Biver Terrace Ath Otr 2	007			Date Dessioned.	10/20	12007 9.30.00 AM
Trojeci.	River Terrace 4th Qu 2	007			Date Received:	10/30	72007
Lab ID:	0710548-01				Matrix:	AQU	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC
Diesel Range O	Irganics (DRO)	1.4	1.0	1	mg/L	1	11/5/2007 11:55:53 PM
Motor Oil Range	e Organics (MRO)	ND	5.0	1	mg/L	1	11/5/2007 11:55:53 PM
Surr: DNOP		130	58-140	I	%REC	1	11/5/2007 11:55:53 PM
EPA METHOD	8015B: GASOLINE RANG	E					Analyst: NSB
Gasoline Range	e Organics (GRO)	22	1.0	1	mg/L	20	11/2/2007 11:46:24 AM
Surr: BFB	· · · ·	111	79.2-121		%REC	20	11/2/2007 11:46:24 AM
EPA METHOD	8021B: VOLATILES						Analyst: NSB
Methyl tert-buty	I ether (MTBE)	NĎ	50	1	µg/L	20	11/2/2007 11:46:24 AM
Benzene		1500	20	1	µg/L	20	11/2/2007 11:46:24 AM
Toluene		ND	20		µg/L	20	11/2/2007 11:46:24 AM
Ethylbenzene		2400	100		µg/L	100	10/31/2007 12:43:21 PM
Xylenes, Total		3700	200		µg/L	100	10/31/2007 12:43:21 PM
Surr: 4-Brom	ofluorobenzene	101	70.2-105	1	%REC	20	11/2/2007 11:46:24 AM
EPA 6010B: TO	OTAL RECOVERABLE ME	TALS					Analyst: SLB
Lead		0.0071	0.0050	I	mg/L	1	11/13/2007 12:47:35 PM

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



3

Date: 14-Nov-07



Date: 14-Nov-07

CLIENT:	San Juan Refining			Client Sample II	): TP-1	
Lab Order:	0710548			<b>Collection Dat</b>	e: 10/29	/2007 10:15:00 AM
Project:	River Terrace 4th Qtr 2	2007		Date Receive	<b>1:</b> 10/30	/2007
Lab ID:	0710548-02			Matri	<b>x:</b> AQU	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Drganics (DRO)	1.8	1.0	mg/L	1	11/6/2007 12:30:00 AM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	11/6/2007 12:30:00 AM
Surr: DNOP		125	58-140	%REC	1	11/6/2007 12:30:00 AM
EPA METHOD	8015B: GASOLINE RANG	ε				Analyst: NSB
Gasoline Rang	e Organics (GRO)	64	2.5	mg/L	50	11/2/2007 1:16:27 PM
Surr: BFB		112	79.2-121	%REC	50	11/2/2007 1:16:27 PM
EPA METHOD	8021B: VOLATILES					Analyst: <b>NSB</b>
Methyi tert-buty	/I ether (MTBE)	ND	120	µg/L	50	11/2/2007 1:16:27 PM
Benzene		1500	50	µg/L	50	11/2/2007 1:16:27 PM
Toluene		ND	. 50	µg/L	50	11/2/2007 1:16:27 PM
Ethylbenzene		3800	50	µg/L	50	11/2/2007 1:16:27 PM
Xylenes, Total		18000	400	µg/L	200	11/2/2007 12:46:23 PM
Surr: 4-Brom	nofluorobenzene	103	70.2-105	%REC	50	11/2/2007 1:16:27 PM
EPA 6010B: TO		TALS				Analyst: SLB
Lead		0.044	0.0050	mg/L	1	11/13/2007 12:52:29 PM

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	San Juan Refining			C	lient Sample ID:	TP-6	
Lab Order:	0710548				Collection Date:	10/2	9/2007 10:40:00 AM
Project:	River Terrace 4th Qtr 20	007			Date Received:	10/3	0/2007
Lab ID:	0710548-03				Matrix:	AQU	JEOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC
Diesel Range C	Organics (DRO)	ND	1.0		mg/L	1	11/6/2007 1:04:10 AM
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L	1	11/6/2007 1:04:10 AM
Surr: DNOP		118	58-140		%REC	1	11/6/2007 1:04:10 AM
EPA METHOD	8015B: GASOLINE RANG	E					Analyst: <b>NSB</b>
Gasoline Rang	e Organics (GRO)	0.069	0.050		mg/L	1	11/1/2007 1:52:07 PM
Surr: BFB	-	94.2	79.2-121		%REC	1	11/1/2007 1:52:07 PM
EPA METHOD	8021B: VOLATILES						Analyst: <b>NSB</b>
Methyl tert-buty	/I ether (MTBE)	NÐ	2.5		µg/L	1	11/1/2007 1:52:07 PM
Benzene		ND	1.0		µg/L	1	11/1/2007 1:52:07 PM
Toluene		ND	1.0		µg/L	1	11/1/2007 1:52:07 PM
Ethylbenzene		ND	1.0		µg/L	1	11/1/2007 1:52:07 PM
Xylenes, Total		ND	2.0		µg/L	1	11/1/2007 1:52:07 PM
Surr: 4-Brom	ofluorobenzene	83.7	70.2-105		%REC	1	11/1/2007 1:52:07 PM
, 		TALO					Analysty CLD
EPA 50108: 10	JIAL KEUUVEKABLE ME	IALO					Analyst. SLB

0.0050

mg/L

1

ND

Hall Environmental Analysis Laboratory, Inc.

#### Date: 14-Nov-07

11/13/2007 12:57:24 PM

Qualifiers:

Lead

- Value exceeds Maximum Contaminant Level \*
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Not Detected at the Reporting Limit ND
- Spike recovery outside accepted recovery limits S
- Analyte detected in the associated Method Blank В
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	San Juan Refining			C	Client Sample ID:	TP-8	
Lab Order:	0710548				<b>Collection Date:</b>	10/29	/2007 11:10:00 AM
Project:	River Terrace 4th Qtr 2	2007			Date Received:	10/30	/2007
Lab ID:	0710548-04				Matrix:	AQU	EOUS
Analyses	· · · · · · · · · · · · · · · · · · ·	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC
Diesel Range O	Irganics (DRO)	1.6	1.0		mg/L	1	11/6/2007 1:38:15 AM
Motor Oil Range	e Organics (MRO)	ND	5.0		mg/L	1	11/6/2007 1:38:15 AM
Surr: DNOP		138	58-140		%REC	1	11/6/2007 1:38:15 AM
EPA METHOD	8015B: GASOLINE RANG	SE .					Analyst: NSB
Gasoline Range	e Organics (GRO)	14	0.50		mg/L	10	10/31/2007 2:51:25 PM
Surr: BFB		116	79.2-121		%REC	10	10/31/2007 2:51:25 PM
EPA METHOD	8021B: VOLATILES						Analyst: <b>NSB</b>
Methyl tert-buty	l ether (MTBE)	ND	25		µg/L	10	10/31/2007 2:51:25 PM
Benzene		ND	10		µg/L	10	10/31/2007 2:51:25 PM
Toluene		ND	10		µg/L	10	10/31/2007 2:51:25 PM
Ethylbenzene		380	10		µg/L	10	10/31/2007 2:51:25 PM
Xylenes, Total		1500	20		µg/L	10	10/31/2007 2:51:25 PM
Surr: 4-Brom	ofluorobenzene	105	70.2-105	S	%REC	10	10/31/2007 2:51:25 PM
EPA 6010B: TC	TAL RECOVERABLE ME	TALS					Analyst: SLB
Lead		0.030	0.0050		mg/L	1	11/13/2007 1:01:09 PM

Date: 14-Nov-07



Qualifiers:

\* Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 4 of 9

CLIENT:	San Juan Refining			C	lient Sample ID:	TP-8	FD
Lab Order:	0710548				<b>Collection Date:</b>	10/2	9/2007 11:15:00 AM
Project:	River Terrace 4th Qtr 20	07			Date Received:	10/3	0/2007
Lab ID:	0710548-05				Matrix:	AQL	IEOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC
Diesel Range O	rganics (DRO)	1.5	1.0		mg/L	1	11/6/2007 2:12:20 AM
Motor Oil Range	e Organics (MRO)	ND	5.0		mg/L	1	11/6/2007 2:12:20 AM
Surr: DNOP		125	58-140		%REC	1	11/6/2007 2:12:20 AM
EPA METHOD	8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range	e Organics (GRO)	19	0.50		mg/L	10	10/31/2007 4:26:56 PM
Surr: BFB		119	79.2-121		%REC	10	10/31/2007 4:26:56 PM
EPA METHOD	8021B: VOLATILES						Analyst: NSB
Methyl tert-buty	l ether (MTBE)	ND	25		µg/L	10	10/31/2007 4:26:56 PM
Benzene		ND	10		μg/L	10	10/31/2007 4:26:56 PM
Toluene		ND	10		µg/L	10	10/31/2007 4:26:56 PM
Ethylbenzene		510	10		µg/L	10	10/31/2007 4:26:56 PM
Xyienes, Total		1800	20		µg/L	10	10/31/2007 4:26:56 PM
Surr: 4-Brom	ofluorobenzene	108	70.2-105	S	%REC	10	10/31/2007 4:26:56 PM
EPA 6010B: TC	OTAL RECOVERABLE MET	ALS					Analyst: SLB
Lead		0.029	0.0050		mg/L	1	11/13/2007 1:06:02 PM

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#### **Date:** 14-Nov-07

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



CLIENT:	San Juan Refining			С	lient Sample ID:	TP-5	
Lab Order:	0710548				Collection Date:	10/29/	/2007 1:50:00 PM
Project:	River Terrace 4th Otr 2	007			Date Received:	10/30	/2007
Lab ID:	0710548-06				Matrix:	AQUI	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE				<u> </u>		Analyst: SCC
Diesel Range C	Organics (DRO)	1.2	1.0		mg/L	1	11/6/2007 2:46:26 AM
Motor Oil Range	e Organics (MRO)	ND	5.0		mg/L	1	11/6/2007 2:46:26 AM
Surr: DNOP		136	58-140		%REC	1	11/6/2007 2:46:26 AM
EPA METHOD	8015B: GASOLINE RANG	E					Analyst: NSB
Gasoline Range	e Organics (GRO)	56	2.5		mg/L	50	10/31/2007 5:56:43 PM
Surr: BFB		109	79.2-121		%REC	50	10/31/2007 5:56:43 PM
EPA METHOD	8021B: VOLATILES						Analyst: NSB
Methyl tert-buty	l ether (MTBE)	ND	120		µg/L	50	10/31/2007 5:56:43 PM
Benzene		ND	50		µg/L	50	10/31/2007 5:56:43 PM
Toluene		ND	50		µg/L	50	10/31/2007 5:56:43 PM
Ethylbenzene		2600	50		µg/L	50	10/31/2007 5:56:43 PM
Xylenes, Total		17000	1000		µg/L	500	10/31/2007 5:26:49 PM
Surr: 4-Brom	ofiuorobenzene	101	70.2-105		%REC	50	10/31/2007 5:56:43 PM
EPA 6010B: TC	TAL RECOVERABLE ME	TALS					Analyst: SLB
Lead		0.032	0.0050		mg/L	1	11/13/2007 1:18:11 PM

Date: 14-Nov-07

Qualifiers:

\* Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

8

Page 6 of 9

	•		-		1	
CLIENT:	San Juan Refining			Client Sample	<b>ID:</b> TP-9	
Lab Order:	0710548			Collection Da	te: 10/29/	/2007 2:15:00 PM
Project:	River Terrace 4th Qtr 20	07		Date Receiv	ed: 10/30/	2007
Lab ID:	0710548-07			Mat	rix: AQUI	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE		······································			Analyst: SCC
Diesel Range C	Organics (DRO)	ND	1.0	mg/L	1	11/6/2007 3:20:35 AM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	11/6/2007 3:20:35 AM
Surr: DNOP		131	58-140	%REC	1	11/6/2007 3:20:35 AM
EPA METHOD	8015B: GASOLINE RANGE	E				Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	10/31/2007 9:56:41 PM
Surr: BFB	:	92.4	79.2-121	%REC	1	10/31/2007 9:56:41 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-buty	l ether (MTBE)	ND	2.5	µg/L	1	10/31/2007 9:56:41 PM
Benzene		ND	1.0	μg/L	1	10/31/2007 9:56:41 PM
Toluene		ND	1.0	µg/L	1	10/31/2007 9:56:41 PM
Ethylbenzene		ND	1.0	µg/L	1	10/31/2007 9:56:41 PM
Xylenes, Total		ND	2.0	µg/L	1	10/31/2007 9:56:41 PM
Surr: 4-Brom	nofluorobenzene	81.7	70.2-105	%REC	1	10/31/2007 9:56:41 PM
EPA 6010B: TO	OTAL RECOVERABLE MET	TALS			•	Analyst: SLB
Lead		ND	0.0050	mg/L	1	11/13/2007 1:21:47 PM

Date: 14-Nov-07

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

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CLIENT:	San Juan Refining			Client Sar	nple ID: Field	Blank
Lab Order:	0710548			Collectio	on Date: 10/29	9/2007 2:30:00 PM
Project:	River Terrace 4th Qtr 2	2007		Date R	eceived: 10/30	)/2007
Lab ID:	0710548-08				Matrix: AQU	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE				······	Analyst: SCC
Diesel Range O	rganics (DRO)	ND	1.0	mg/L	1	11/6/2007 4:29:35 AM
Motor Oil Range	e Organics (MRO)	ND	5.0	mg/L	1	11/6/2007 4:29:35 AM
Surr: DNOP		127	58-140	%REC	1	11/6/2007 4:29:35 AM
EPA METHOD	8015B: GASOLINE RANG	θE				Analyst: NSB
Gasoline Range	e Organics (GRO)	ND	0.050	. mg/L	1	10/31/2007 10:26:41 PM
Surr: BFB		91.5	79.2-121	%REC	1	10/31/2007 10:26:41 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-buty	l ether (MTBE)	ND	2.5	µg/L	1	10/31/2007 10:26:41 PM
Benzene		ND	1.0	µg/L	. 1	10/31/2007 10:26:41 PM
Toluene		ND	1.0	µg/L	1	10/31/2007 10:26:41 PM
Ethylbenzene		ND	1.0	µg/L	1	10/31/2007 10:26:41 PM
Xylenes, Total		ND	2.0	µg/L	1	10/31/2007 10:26:41 PM
Surr: 4-Brom	ofluorobenzene	81.0	70.2-105	%REC	1	10/31/2007 10:26:41 PM

Date: 14-Nov-07

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:San Juan RefiningLab Order:0710548Project:River Terrace 4th Qtr 2007

0710548-09

Lab ID:

Date: 14-Nov-07

Client Sample ID: TRIP BLANK Collection Date: Date Received: 10/30/2007 Matrix: TRIP BLANK

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	10/31/2007 10:56:41 PM
Surr: BFB	91.4	79.2-121	%REC	1	10/31/2007 10:56:41 PM
EPA METHOD 8021B: VOLATILES	·				Analyst: <b>NSB</b>
Methyl tert-butyl ether (MTBE)	ND	2.5	µg/L	1	10/31/2007 10:56:41 PM
Benzene	ND	1.0	µg/L	1	10/31/2007 10:56:41 PM
Toluene	ND	1.0	µg/L	1	10/31/2007 10:56:41 PM
Ethylbenzene	ND	1.0	µg/L	1	10/31/2007 10:56:41 PM
Xylenes, Total	ND	2.0	µg/L	1	10/31/2007 10:56:41 PM
Surr: 4-Bromofluorobenzene	80.7	70.2-105	%REC	1	10/31/2007 10:56:41 PM

Qualifiers:

\* Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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Lab Order:	0710548	-					
Client:	San Juan Refining	· .		•	DATESR	EPORT	
Project:	River Terrace 4th Qtr	r 2007					-
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0710548-01A	TP-2	10/29/2007 9:50:00 AM	Aqueous	EPA Method 8015B: Diesel Range	14307	11/5/2007	11/5/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8015B: Gasoline Range	R25871		11/1/2007
				EPA Method 8015B: Gasoline Range	R25907		11/2/2007
ŀ				EPA Method 8021B: Volatiles	R25871		11/1/2007
				EPA Method 8021B: Volatiles	R25907		11/2/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
0710548-01B				EPA 6010B: Total Recoverable Metals	14361	11/12/2007	11/13/2007
0710548-02A	TP-1	10/29/2007 10:15:00 AM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25907		11/2/2007
				EPA Method 8015B: Gasoline Range	R25907		11/2/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8015B: Gasoline Range	R25871		11/1/2007
				EPA Method 8021B: Volatiles	R25907		11/2/2007
				EPA Method 8021B: Volatiles	R25907		11/2/2007
				EPA Method 8021B: Volatiles	R25871		11/1/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
0710548-02B				EPA 6010B: Total Recoverable Metals	14361	11/12/2007	11/13/2007
0710548-03A	TP-6	10/29/2007 10:40:00 AM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8015B: Gasoline Range	R25871		11/1/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
				EPA Method 8021B: Volatiles	R25871		11/1/2007
0710548-03B				EPA 6010B: Total Recoverable Metals	14361	11/12/2007	11/13/2007
071054 <b>8-</b> 04A	TP-8	10/29/2007 11:10:00 AM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007

Page 1 of 3

<b>Hall Environmental Analysis Laboratory</b> ,	Inc.
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14-Nov-07

Lab Order:	0710548						
<b>Client:</b>	San Juan Refining			•	DATESR	EPORT	
Project:	River Terrace 4th Qt	r 2007					
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0710548-04A	TP-8	10/29/2007 11:10:00 AM	Aqueous	EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
0710548-04B				EPA 6010B: Total Recoverable Metals	14361	11/12/2007	11/13/2007
0710548-05A	TP-8 FD	10/29/2007 11:15:00 AM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
0710548-05B				EPA 6010B: Total Recoverable Metals	14361	11/12/2007	11/13/2007
0710548-06A	TP-5	10/29/2007 1:50:00 PM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
0710548-06B				EPA 6010B: Total Recoverable Metals	14361	11/12/2007	11/13/2007
0710548-07A	TP-9	10/29/2007 2:15:00 PM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
0710548-07B				EPA 6010B: Total Recoverable Metals	14361	11/12/2007	11/13/2007
0710548-08A	Field Blank	10/29/2007 2:30:00 PM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
0710548-09A	TRIP BLANK		Trip Blank	EPA Method 8015B: Gasoline Range	R25852		10/31/2007

13

Page 2 of 3

No.

Lab Order: Client: Project:	0710548 San Juan Refining River Terrace 4th Qi	tr 2007			DATES R	EPORT	
<b>Sample ID</b> 0710548-09A	Client Sample ID TRIP BLANK	Collection Date	Matrix Trip Blank	Test Name EPA Method 8021B: Volatiles	QC Batch ID R25852	Prep Date	Analysis Date 10/31/2007
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					·	Pag	ge 3 of 3

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Client: Sa	n Juan Refin	ing								
Project: R	iver Terrace	4th Qtr 20	)07		_			1	Vork Order	·: 0710548
Analyte		Result	Units	PQL	%Rec	LowLimit H	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Metho	od 8015B: Dies	sel Range								
Sample ID: MB-14307	•		MBLK			Batch ID	14307	Analysis E	ate: 11/5/2	007 10:12:38 PM
Diesel Range Organics	(DRO)	ND	mg/L	1.0						
Motor Oil Range Organi	ics (MRO)	ND	mg/L	5.0						
Surr: DNOP		1.234	mg/L	0	123	58	140			
Sample ID: LCS-1430	7		LCS			Batch ID	14307	Analysis D	ate: 11/5/2	007 10:47:02 PM
Diesel Range Organics	(DRO)	5.000	mg/L	1.0	100	74	157			
Surr: DNOP		0.5923	mg/L	0	118	58	140			
Sample ID: LCSD-143	307		LCSD			Batch ID	14307	Analysis D	ate: 11/5/2	007 11:21:27 PM
Diesel Range Organics	(DRO)	5.193	mg/L	1.0	104	74	157	3.79	23	
Surr: DNOP		0.6087	mg/L	0	122	58	140	0.	0	
Method: EPA Metho	od 8015B: Gas	oline Ran	ge							······································
Sample ID: 0710548-0	07A MSD		MSD			Batch ID	: R25852	Analysis D	ate: 10/31/	2007 7:26:39 PM
Gasoline Range Organi	cs (GRO)	0.4050	mg/L	0.050	96.4	80	115	3.11	8.39	
Surr: BFB		19.77	mg/L	0	98.8	79.2	121	0	0	
Sample ID: 5ML RB			MBLK			Batch ID	R25852	Analysis D	ate: 10/31/	2007 9:10:13 AM
Gasoline Range Organi	cs (GRO)	ND	mg/L	0.050						
Surr: BFB '		18.19	mg/L	0	91.0	79.2	121			
Sample ID: 5ML RB			MBLK			Batch ID	R25871	Analysis D	ate: 11/1/	2007 9:16:30 A
Gasoline Range Organi	ics (GRO)	ND	mg/L	0.050						•
Surr: BFB	. ,	18.42	mg/L	0	92.1	79.2	121			
Sample ID: 5ML RB			MBLK			Batch ID	: R25907	Analysis D	ate: 11/2/	2007 9:13:15 AM
Gasoline Range Organi	ics (GRO)	ND	ma/L	0.050						
Surr: BFB	(=,	19.27	ma/L	0	96.4	79.2	121			
Sample ID: 2.5UG GF	ROLCS		LCS	-		Batch ID	R25852	Analysis D	ate: 10/31/	2007 7:56:41 PM
Gasoline Ranne Ordani	ics (GRO)	0.4336	ma/l	0.050	83.0	80	115	,		
Surr: BFB		20.71	ma/L	0	104	79.2	121			
Sample ID: 2.5UG GF	ROLCS		LCS	-		Batch ID	R25871	Analysis D	)ate: 11/1/	2007 8:52:09 PM
Gasoline Range Organi	ics (GRO)	0 4240	ma/l	0.050	81 3	80	115			
Surr BFB		20.01	ma/L	0	100	79.2	121			
Sample ID: 2.5UG GF	ROLCS	20.07	LCS	-		Batch ID	R25907	Analysis E	)ate: 11/2/	2007 8:46:25 PM
Gasoline Range Ordani	ics (GRO)	0 4458	ma/l	0.050	85.5	80	115			
Sur: BEB		20.35	ma/L	0.000	102	79.2	121			
Sample ID: 0710548-	07A MS	_0.00	MS	Ŭ		Batch ID	R25852	Analysis F	ate: 10/31/	2007 6:56:40 PM
Condina Barra Oraci		0 4179	ma/l	0.050	00 6	20	115			2001 0.00.401 W
	ics (GRU)	20 50	mg/L	0.050	39.0 103	0U 70.2	10			
SUID DEB		20.09	ing/L	U	103	13.2	121			

Qual	ifiers:	
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- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Mient: Project:

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San Juan Refining River Terrace 4th Qtr 2007

Work Order: 0710548

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RF	DLimit Qual
Method: EPA Method 8021B: V	/olatiles							
Sample ID: 5ML RB		MBLK			Batch	ID: <b>R25852</b>	Analysis Date:	10/31/2007 9:10:13 AM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5					
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Surr: 4-Bromofluorobenzene	16.28	µg/L	0	81.4	70.2	105		
Sample ID: 5ML RB		MBLK			Batch	ID: <b>R25871</b>	Analysis Date:	11/1/2007 9:16:30 AM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5					. ·
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Surr: 4-Bromofluorobenzene	16.36	µg/L	0	81.8	70.2	105		
Sample ID: 5ML RB		MBLK			Batch	ID: <b>R25907</b>	Analysis Date:	11/2/2007 9:13:15 AM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5					
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
hylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Surr: 4-Bromofluorobenzene	17.33	µg/L	0	86.6	70.2	105		
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R25852	Analysis Date:	10/31/2007 8:56:39 PM
Methyl tert-butyl ether (MTBE)	19.72	µg/L	2.5	98.6	51.2	138		
Benzene	19.94	µg/L	1.0	99.7	85.9	113		
Toluene	19.42	μg/L	1.0	97.1	86.4	113		
Ethylbenzene	18.95	µg/L	1.0	93.9	83.5	118		
Xylenes, Total	55.95	µg/L	2.0	92.7	83.4	122		
Surr: 4-Bromofluorobenzene	17.92	µg/L	0	89.6	70.2	105		
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: <b>R25871</b>	Analysis Date:	11/1/2007 9:52:00 PM
Methyl tert-butyl ether (MTBE)	20.43	ug/L	2.5	102	51.2	138	-	
Benzene	20.71	µg/L	1.0	104	85.9	113		
Toluene	20.05	µg/L	1.0	100	86.4	113		
Ethylbenzene	19.56	µg/L	1.0	97.4	83.5	118		
Xylenes, Total	57.87	µg/L	2.0	96.5	83.4	122		
Surr: 4-Bromofluorobenzene	18.17	µg/L	0	90.9	70.2	105		
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: <b>R25907</b>	Analysis Date:	11/2/2007 9:46:17 PM
Methyl tert-butyl ether (MTBE)	19.71	µg/L	2.5	98.6	51.2	138		
Benzene	21.25	μg/L	1.0	106	85.9	113		
Toluene	20.75	µg/L	1.0	104	86.4	113		
Ethylbenzene	20.32	µg/L	1.0	102	83.5	118		
Xylenes, Total	60.12	µg/L	2.0	100	83.4	122		
Surr. 4-Bromofluorobenzene	18.68	ug/L	0	93.4	70.2	105		
		F3-	~	<b>UU</b>	,			

- Qualifiers: E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Project:	River Terrac	tining the 4th Qtr 20	007					<b>Work Order:</b> 0710548					
Analyte		Result	Units	PQL	%Rec	LowLimit High	hLimit	%RPD RF	PDLimit Qual				
Method:	EPA 6010B: Total Rec	coverable Me	etals										
Sample ID:	0710548-03B MSD		MSD			Batch ID:	14361	Analysis Date:	11/13/2007 1:29:00 PM				
Lead		0.5774	mg/L	0.0050	115	75 12	25	0.636	20				
Sample ID:	MB-14361		MBLK			Batch ID:	14361	Analysis Date:	11/13/2007 12:32:48 PM				
Lead		ND	mg/L	0.0050									
Sample ID:	LCS-14361		LCS			Batch ID:	14361	Analysis Date:	11/13/2007 12:36:41 PM				
Lead		0.5633	mg/L	0.0050	113	80 12	20						
Sample ID:	0710548-03B MS		MS			Batch ID:	14361	Analysis Date:	11/13/2007 1:25:30 PM				
Lead		0.5738	mg/L	0.0050	115	75 · 12	25						

#### Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Page 3

Samp	le Receipt Ch	necklist		
Client Name SJR		Date and Tim	e Received:	10/30/2007
Work Order Number 0710548		Received b	y ARS	
Checklist completed b Signature	Date	30 07		
Matrix Carrier nam	e <u>UPS</u>			
Shipping container/cooler in good condition?	Yes 🖌	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes 🗌	No 🗌	N/A	
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 🗌		
II samples received within holding time?	Yes 🗹	No 🗌		
Water - VOA vials have zero headspace? No VOA vials su	ubmitted 🗹	Yes	No 🗌	
Water - Preservation labels on bottle and cap match?	Yes 🗹	No 🗌	N/A	
Water - pH acceptable upon receipt?	Yes 🗹	No 🗌	N/A	
Container/Temp Blank temperature?	3°	4° C ± 2 Accept	table	
COMMENTS:		If given sufficier	nt time to cool.	
Client contacted Date contacted:		Per	son contacted	
Contacted by: Begarding				
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Comments: Udded ml HNO3 To 1	sample C	710548-	2(TP-1)	for acceptable
ph. AS 10/30/07			· · · ·	<b>~</b>
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Corrective Action				

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GA / GC Package:	Std 🗖 Level 4 🖌 Other:	Project Name:	River Terrero 44 am - 2007	Project #:		Project Manager:		Samogh / Ruk	Sample Temperature: $\mathcal{S}^{v}$	Number/Volume HEAL No.	A HSCI I LO TOH BOLL AND BH	4-Vor X 7	1-sond X James-1	4-VOA 1 × 8	6								Received By: (Signature) Received By: (Signature)
	Chain-of-Custody Record	Client M. L. L. L.		Address: #50 Rd 499	Bloomfield NM 87413			Phone # 505- 632-4161	Fax#: 505-632-3911	Date Matrix Sample I.D. No.		192407 215A HEU TP-9		/ 230an / Field Blank	theblank								Date: Time: Relindushed By: (Signature)



#### COVER LETTER

Thursday, November 29, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace 4th Qtr 2007

Dear Cindy Hurtado:

Order No.: 0710559

Hall Environmental Analysis Laboratory, Inc. received 10 sample(s) on 10/31/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or  $\leq$  sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE 
Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Date: 29-Nov-07

CLIENT: Project: Lab Order:	San Juan Refining River Terrace 4th Qt 0710559	r 2007	Work Order	Sample Summary
Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0710559-01A	TP-13	R25852	EPA Method 8015B: Gasoline Range	10/30/2007 8:35:00 AM
0710559-01A	TP-13	14307	EPA Method 8015B: Diesel Range	10/30/2007 8:35:00 AM
0710559-01A	TP-13	R25852	EPA Method 8021B: Volatiles	10/30/2007 8:35:00 AM
0710559-01B	TP-13	14339	EPA 6010B: Total Recoverable Metals	10/30/2007 8:35:00 AM
0710559-02A	TP-12	R25852	EPA Method 8021B: Volatiles	10/30/2007 9:00:00 AM
0710559-02A	TP-12	R25852	EPA Method 8015B: Gasoline Range	10/30/2007 9:00:00 AM
0710559-02A	TP-12	14307	EPA Method 8015B: Diesel Range	10/30/2007 9:00:00 AM
0710559-02B	TP-12	14339	EPA 6010B: Total Recoverable Metals	10/30/2007 9:00:00 AM
0710559-03A	TP-11	R25852	EPA Method 8021B: Volatiles	10/30/2007 9:25:00 AM
0710559-03A	TP-11	R25852	EPA Method 8015B: Gasoline Range	10/30/2007 9:25:00 AM
0710559-03A	TP-11	14307	EPA Method 8015B: Diesel Range	10/30/2007 9:25:00 AM
0710559-03B	TP-11	14339	EPA 6010B: Total Recoverable Metals	10/30/2007 9:25:00 AM
0710559-04A	TP-10	R25852	EPA Method 8021B: Volatiles	10/30/2007 10:25:00 AM
0710559-04A	TP-10	R25852	EPA Method 8015B: Gasoline Range	10/30/2007 10:25:00 AM
0710559-04A	TP-10	14307	EPA Method 8015B: Diesel Range	10/30/2007 10:25:00 AM
0710559-04B	TP-10	14339	EPA 6010B: Total Recoverable Metals	10/30/2007 10:25:00 AM
0710559-05A	TP-3	14307	EPA Method 8015B: Diesel Range	10/30/2007 10:40:00 AM
0710559-05A	TP-3	R25852	EPA Method 8021B: Volatiles	10/30/2007 10:40:00 AM
0710559-05A	TP-3	R25852	EPA Method 8015B: Gasoline Range	10/30/2007 10:40:00 AM
0710559-05B	TP-3	14339	EPA 6010B: Total Recoverable Metals	10/30/2007 10:40:00 AM
0710559-06A	TP-7	R25852	EPA Method 8021B: Volatiles	10/30/2007 11:00:00 AM
0710559-06A	TP-7	R25852	EPA Method 8015B: Gasoline Range	10/30/2007 11:00:00 AM
0710559-06A	TP-7	14307	EPA Method 8015B: Diesel Range	10/30/2007 11:00:00 AM
0710559-06B	TP-7	14339	EPA 6010B: Total Recoverable Metals	10/30/2007 11:00:00 AM
0710559-07A	DW #1	14307	EPA Method 8015B: Diesel Range	10/30/2007 1:20:00 PM
0710559-07A	DW #1	R25852	EPA Method 8021B: Volatiles	10/30/2007 1:20:00 PM
0710559-07A	DW #1	R25852	EPA Method 8015B: Gasoline Range	10/30/2007 1:20:00 PM
0710559-07B	DW #1	14339	EPA 6010B: Total Recoverable Metals	10/30/2007 1:20:00 PM
0710559-07B	DW #1	14433	EPA Method 7470: Mercury	10/30/2007 1:20:00 PM
0710559-08A	MW #49	R25852	EPA Method 8021B: Volatiles	10/30/2007 2:05:00 PM
0710559-08A	MW #49	R25852	EPA Method 8015B: Gasoline Range	10/30/2007 2:05:00 PM
0710559-08A	MW #49	14307	EPA Method 8015B: Diesel Range	10/30/2007 2:05:00 PM
0710559-08B	MW #49	14339	EPA 6010B: Total Recoverable Metals	10/30/2007 2:05:00 PM
0710559-09A	Field Blank	R25852	EPA Method 8021B: Volatiles	10/30/2007 2:15:00 PM
0710559-09A	Field Blank	R25852	EPA Method 8015B: Gasoline Range	10/30/2007 2:15:00 PM
0710559-10A	Trip Blank	R25852	EPA Method 8015B: Gasoline Range	
0710559-10A	Trip Blank	R25852	EPA Method 8021B: Volatiles	

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CLIENT:	San Juan Refining			Client Sample ID:	TP-13		
Lab Order:	0710559			<b>Collection Date:</b>	10/30	/2007 8:35:00 AM	
Project:	River Terrace 4th Qtr 20	07		Date Received:	10/31/2007		
Lab ID:	<b>b ID:</b> 0710559-01			Matrix:	AQUEOUS		
Analyses		Result	PQL Qua	l Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC	
Diesel Range C	Drganics (DRO)	ND	1.0	mg/L	1	11/6/2007 5:04:14 AM	
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	11/6/2007 5:04:14 AM	
Surr: DNOP		127	58-140	%REC	1	11/6/2007 5:04:14 AM	
EPA METHOD	8015B: GASOLINE RANGE	E				Analyst: NSB	
Gasoline Range	e Organics (GRO)	ND	0.050	mg/L	1	10/31/2007 11:26:35 PM	
Surr: BFB		92.8	79.2-121	%REC	1	10/31/2007 11:26:35 PM	
EPA METHOD	8021B: VOLATILES					Analyst: NSB	
Methyl tert-buty	i ether (MTBE)	ND	2.5	µg/L	1	10/31/2007 11:26:35 PM	
Benzene		ND	1.0	µg/L	1	10/31/2007 11:26:35 PM	
Toluene		ND	1.0	µg/L	1	10/31/2007 11:26:35 PM	
Ethylbenzene		NÐ	1.0	µg/L	1	10/31/2007 11:26:35 PM	
Xylenes, Total		ND	2.0	µg/L	1	10/31/2007 11:26:35 PM	
Surr: 4-Brom	ofluorobenzene	81.8	70.2-105	%REC	1	10/31/2007 11:26:35 PM	
EPA 6010B: TO	OTAL RECOVERABLE MET	TALS				Analyst: NMO	
Lead		ND	0.0050	mg/L	1	11/12/2007 8:55:55 AM	

Date: 29-Nov-07

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	San Juan Refining			Client Sample I	<b>D:</b> TP-12	2
Lab Order:	0710559			Collection Dat	t <b>e:</b> 10/30	/2007 9:00:00 AM
Project:	River Terrace 4th Qtr 20	007		Date Receive	d: 10/31	/2007
Lab ID:	0710559-02		•	Matri	ix: AQU	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range C	Prganics (DRO)	ND	1.0	mg/L	1	11/6/2007 5:38:54 AM
Motor Oil Range Organics (MRO)		ND	5.0	mg/L	1	11/6/2007 5:38:54 AM
Surr: DNOP		129	58-140	%REC	1	11/6/2007 5:38:54 AM
EPA METHOD	8015B: GASOLINE RANGI	E		•		Analyst: NSB
Gasoline Range	e Organics (GRO)	ND	0.050	mg/L	1	10/31/2007 11:56:28 PM
Surr: BFB		95.5	79.2-121	%REC	1	10/31/2007 11:56:28 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-buty	i ether (MTBE)	ND	2.5	μg/L	1	10/31/2007 11:56:28 PM
Benzene		ND	1.0	μg/L	1	10/31/2007 11:56:28 PM
Toluene		ND	. 1.0	µg/L	1	10/31/2007 11:56:28 PM
Ethylbenzene		ND	1.0	µg/L	1	10/31/2007 11:56:28 PM
Xylenes, Total		ND	2.0	µg/L	1	10/31/2007 11:56:28 PM
Surr: 4-Brom	ofluorobenzene	84.5	70.2-105	%REC	1	10/31/2007 11:56:28 PM
EPA 6010B: TO	OTAL RECOVERABLE ME	TALS				Analyst: NMO
Lead		0.010	0.0050	mg/L	1	11/12/2007 8:58:47 AM

**Date:** 29-Nov-07

Qualifiers:

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Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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Date: 29-Nov-07

CLIENT:San Juan RefiningLab Order:0710559Project:River Terrace 4th QLab ID:0710559-03		007		C	Client Sample ID: Collection Date: Date Received: Matrix:	TP-11 10/30/2007 9:25:00 AM 10/31/2007 AQUEOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE		- <u></u>				Analyst: SCC	
Diesel Range C	Organics (DRO)	ND	1.0		mg/L	1	11/6/2007 8:51:16 AM	
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L	1	11/6/2007 8:51:16 AM	
Surr: DNOP		145	58-140	S	%REC	1	11/6/2007 8:51:16 AM	
EPA METHOD	8015B: GASOLINE RANG	Έ					Analyst: NSB	
Gasoline Range	e Organics (GRO)	ND	0.050		mg/L	1	11/1/2007 12:26:27 AM	
Surr: BFB		92.3	79.2-121		%REC	1	11/1/2007 12:26:27 AM	
EPA METHOD	8021B: VOLATILES						Analyst: NSB	
Methyl tert-buty	l ether (MTBE)	ND	2.5		µg/L	1	11/1/2007 12:26:27 AM	
Benzene		ND	1.0		µg/L	1	11/1/2007 12:26:27 AM	
Toluene		ND	1.0		μg/L	1	11/1/2007 12:26:27 AM	
Ethylbenzene		ND	1.0		µg/L	1	11/1/2007 12:26:27 AM	
Xylenes, Total		ND	2.0		µg/L	1	11/1/2007 12:26:27 AM	
Surr: 4-Brom	ofluorobenzene	81.4	70.2-105		%REC	1	11/1/2007 12:26:27 AM	
		TAIS					Analyst: NBAO	
Lead		0 0063	0 0050		ma/l	1	11/12/2007 9:01:43 AM	

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

4

CLIENT:	San Juan Refining			Client Sample	<b>ID:</b> TP-1	0
Lab Order:	0710559			Collection D	ate: 10/30	)/2007 10:25:00 AM
Project:	River Terrace 4th Qtr 2	007		Date Recei	ved: 10/31	/2007
Lab ID:	0710559-04			Ma	trix: AQU	EOUS
Analyses	·	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE			······································		Analyst: SCC
Diesel Range C	Drganics (DRO)	ND	1.0	mg/L	1	11/6/2007 9:25:40 AM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	11/6/2007 9:25:40 AM
Surr: DNOP		140	58-140	%REC	1	11/6/2007 9:25:40 AM
EPA METHOD	8015B: GASOLINE RANG	E.				Analyst: NSB
Gasoline Range	e Organics (GRO)	ND	0.050.	mg/L	1	11/1/2007 12:56:34 AM
Surr: BFB		92.8	79.2-121	%REC	1	11/1/2007 12:56:34 AM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-buty	l ether (MTBE)	ND	2.5	μg/L	1	11/1/2007 12:56:34 AM
Benzene		ND	1.0	µg/L	1	11/1/2007 12:56:34 AM
Toluene		ND	1.0	µg/L	1	11/1/2007 12:56:34 AM
Ethylbenzene		ND	1.0	µg/L	1	11/1/2007 12:56:34 AM
Xylenes, Total		ND	2.0	µg/L	1	11/1/2007 12:56:34 AM
Surr: 4-Brom	ofluorobenzene	81.3	70.2-105	%REC	1	11/1/2007 12:56:34 AM
EPA 6010B: TO	OTAL RECOVERABLE ME	TALS				Analyst: NMO
Lead		ND	0.0050	mg/L	1	11/12/2007 9:04:46 AM

Qualifiers:

\* Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

-

CLIENT:	San Juan Refining			Client Sample II	<b>):</b> TP-3	TP-3 10/30/2007 10:40:00 AM 10/31/2007 AQUEOUS		
Lab Order:	0710559			<b>Collection Dat</b>	<b>e:</b> 10/30			
Project:	River Terrace 4th Qtr 2	007		Date Receive	<b>d:</b> 10/31			
Lab ID:	0710559-05			Matri	x: AQU			
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE	1				Analyst: SCC		
Diesel Range C	Drganics (DRO)	ND	1.0	mg/L	1	11/6/2007 10:00:03 AM		
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	11/6/2007 10:00:03 AM		
Surr: DNOP		130	58-140	%REC	1	11/6/2007 10:00:03 AM		
EPA METHOD	8015B: GASOLINE RANG	E				Analyst: <b>NSB</b>		
Gasoline Range	e Organics (GRO)	ND	0.050	mg/L	1	11/1/2007 1:26:33 AM		
Surr: BFB		93.1	79.2-121	%REC	1	11/1/2007 1:26:33 AM		
EPA METHOD	8021B: VOLATILES					Analyst: <b>NSB</b>		
Methyl tert-buty	/I ether (MTBE)	ND	2.5	µg/L	1	11/1/2007 1:26:33 AM		
Benzene		ND	1.0	µg/L	1	11/1/2007 1:26:33 AM		
Toluene		ND	1.0	µg/L	1	11/1/2007 1:26:33 AM		
Ethylbenzene		ND	1.0	µg/L	1	11/1/2007 1:26:33 AM		
Xylenes, Total		ND	2.0	µg/L	1	11/1/2007 1:26:33 AM		
Surr: 4-Brom	ofluorobenzene	81.8	70.2-105	%REC	1	11/1/2007 1:26:33 AM		
EPA 6010B: TO	OTAL RECOVERABLE ME	TALS				Analyst: NMO		
Lead		ND	0.0050	mg/L	1	11/12/2007 9:07:52 AM		

Date: 29-Nov-07



Qualifiers: \*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 5 of 10

CLIENT:	San Juan Refining			Client Sample	e ID: 7	Г <b>Р-</b> 7		
Lab Order:	0710559			Collection I	Date: 1	0/30	/2007 11:00:00 AM	
Project:	River Terrace 4th Qtr 2	007		Date Rece	ived: 1	0/31	/2007	
Lab ID:	0710559-06			Ma	trix: A	AQUEOUS		
Analyses	· ·	Result	PQL	Qual Units	Ι	OF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE	•		·····			Analyst: SCC	
Diesel Range C	Organics (DRO)	ND	1.0	mg/L	1		11/6/2007 10:34:47 AM	
Motor Oil Range Organics (MRO)		ND	5.0	mg/L	1		11/6/2007 10:34:47 AM	
Surr: DNOP		134	58-140	%REC	1		11/6/2007 10:34:47 AM	
EPA METHOD	8015B: GASOLINE RANG	E					Analyst: NSB	
Gasoline Range	e Organics (GRO)	ND	0.050	mg/L	1		11/1/2007 1:56:32 AM	
Surr: BFB		92.3	79.2-121	%REC	. 1		11/1/2007 1:56:32 AM	
EPA METHOD	8021B: VOLATILES						Analyst: <b>NSB</b>	
Methyl tert-buty	vl ether (MTBE)	ND	2.5	µg/L	1		11/1/2007 1:56:32 AM	
Benzene		ND	1.0	µg/L	· 1		11/1/2007 1:56:32 AM	
Toluene		ND	1.0	µg/L	. 1		11/1/2007 1:56:32 AM	
Ethylbenzene		ND	1.0	µg/L	1	·	11/1/2007 1:56:32 AM	
Xylenes, Total	·	• ND	2.0	µg/L	1		11/1/2007 1:56:32 AM	
Surr: 4-Brom	ofluorobenzene	81.4	70.2-105	%REC	1		11/1/2007 1:56:32 AM	
EPA-6010B: TO	OTAL RECOVERABLE ME	TALS					Analyst: <b>NMO</b>	
Lead		ND	0.0050	ma/L	1		11/12/2007 9:13:03 AM	

Date: 29-Nov-07

Qualifiers: \*

Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

RL Reporting Limit

7

Lab Order:	0710559				<b>Collection Date:</b>	10/30/2007 1:20:00 PM			
Project:	River Terrace 4th Qtr	2007			Date Received:	10/31/2007 AQUEOUS			
Lab ID:	0710559-07				Matrix:				
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC		
Diesel Range (	Organics (DRO)	ND	1.0		mg/L	1	11/6/2007 11:09:31 AM		
Motor Oil Range Organics (MRO)		ND	5.0		mg/L	1	11/6/2007 11:09:31 AM		
Surr: DNOP		138	58-140	•	%REC	1	11/6/2007 11:09:31 AM		
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB		
Gasoline Rang	e Organics (GRO)	0.064	0.050		mg/L	1	11/1/2007 2:26:33 AM		
Surr: BFB		96.8	79.2-121		%REC	1	11/1/2007 2:26:33 AM		
EPA METHOD	8021B: VOLATILES						Analyst: <b>NSB</b>		
Methyi tert-buty	/I ether (MTBE)	ND	2.5		µg/L	1	11/1/2007 2:26:33 AM		
Benzene		ND	1.0		µg/L	1	11/1/2007 2:26:33 AM		
Toluene		ND	1.0		µg/L	1	11/1/2007 2:26:33 AM		
Ethylbenzene		ND	1.0		µg/L	1	11/1/2007 2:26:33 AM		
Xylenes, Total		ND	2.0		µg/L	1	11/1/2007 2:26:33 AM		
Surr: 4-Brom	nofluorobenzene	85.5	70.2-105		%REC	1	11/1/2007 2:26:33 AM		
EPA METHOD	7470: MERCURY						Analyst: SLB		
Mercury	-	ND	0.00020		mg/L	1	11/19/2007 3:12:05 PM		
EPA 6010B: T	OTAL RECOVERABLE M	ETALS					Analyst: NMO		
Lead		ND	0.0050		mg/L	1	11/12/2007 10:13:03 AM		

San Juan Refining

**CLIENT:** 

Date: 29-Nov-07

Client Sample ID: DW #1

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

8

CLIENT:	San Juan Refining			Client Sample I	D: MW	/ #49
Lab Order:	0710559			Collection Dat	te: 10/3	0/2007 2:05:00 PM
Project:	River Terrace 4th Qtr 2	2007		Date Receive	<b>d:</b> 10/3	1/2007
Lab ID:	0710559-08			Matri	x: AQI	JEOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range O	rganics (DRO)	ND	1.0	mg/L	1	11/6/2007 11:44:16 AM
Motor Oil Range	e Organics (MRO)	ND	5.0	mg/L	1	11/6/2007 11:44:16 AM
Surr: DNOP		124	58-140	%REC	1	11/6/2007 11:44:16 AM
EPA METHOD 8	8015B: GASOLINE RANG	E				Analyst: NSB
Gasoline Range	Organics (GRO)	0.050	0.050	mg/L	1	11/1/2007 4:56:17 AM
Surr: BFB		97.6	79.2-121	%REC	1	11/1/2007 4:56:17 AM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-butyl	ether (MTBE)	ND	2.5	µg/L	1	11/1/2007 4:56:17 AM
Benzene		ND	1.0	µg/L	1	11/1/2007 4:56:17 AM
Toluene		ND	1.0	µg/L	1	11/1/2007 4:56:17 AM
Ethylbenzene		ND	1.0	µg/L	1	11/1/2007 4:56:17 AM
Xylenes, Total		ND	2.0	μg/L	1	11/1/2007 4:56:17 AM
Surr: 4-Bromo	ofluorobenzene	82.6	70.2-105	%REC	1	11/1/2007 4:56:17 AM
EPA 6010B: TO	TAL RECOVERABLE ME	TALS				Analyst: NMO
Lead		ND	0.0050	mg/L	1	11/12/2007 10:14:41 AM

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

9

Date: 29-1107-07

Date: 29-Nov-07



Date: 29-Nov-07

CLIENT:	San Juan Refining	Client Sample ID: Field Blank	
Lab Order:	0710559	Collection Date: 10/30/2007 2:15:00 PM	
Project:	River Terrace 4th Qtr 2007	Date Received: 10/31/2007	
Lab ID:	0710559-09	Matrix: AQUEOUS	

Result	PQL Qual	Units	DF	Date Analyzed
				Analyst: NSB
ND	0.050	mg/L	1	11/1/2007 5:26:13 AM
97.4	79.2-121	%REC	1	11/1/2007 5:26:13 AM
				Analyst: NSB
ND	2.5	µg/L	1	11/1/2007 5:26:13 AM
ND	1.0	µg/L	1	11/1/2007 5:26:13 AM
ND	1.0	µg/L	1	11/1/2007 5:26:13 AM
ND	1.0	µg/L	1	11/1/2007 5:26:13 AM
ND	2.0	µg/L	1	11/1/2007 5:26:13 AM
86.4	70.2-105	%REC	1	11/1/2007 5:26:13 AM
	ND 97.4 ND ND ND ND ND 86.4	Result         PQL         Qual           ND         0.050           97.4         79.2-121           ND         2.5           ND         1.0           ND         1.0           ND         2.0           86.4         70.2-105	Result         PQL         Qual         Units           ND         0.050         mg/L           97.4         79.2-121         %REC           ND         2.5         µg/L           ND         1.0         µg/L           ND         1.0         µg/L           ND         1.0         µg/L           ND         2.0         µg/L           86.4         70.2-105         %REC	Result         PQL         Qual         Units         DF           ND         0.050         mg/L         1           97.4         79.2-121         %REC         1           ND         2.5         µg/L         1           ND         1.0         µg/L         1           ND         1.0         µg/L         1           ND         1.0         µg/L         1           ND         1.0         µg/L         1           ND         2.0         µg/L         1           86.4         70.2-105         %REC         1

Qualifiers:

:1

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:San Juan RefiningLab Order:0710559Project:River Terrace 4th Qtr 2007Lab ID:0710559-10

Date: 29-Nov-07

Client Sample ID: Trip Blank Collection Date: Date Received: 10/3 1/2007 Matrix: TRIP BLANK

nalyses	Result	PQL	Qual	Units	DF	Date Analyzed
PA METHOD 8015B: GASOLINE RANGE Gasoline Range Organics (GRO) Surr: BFB	ND 90.5	0.050 79.2-121	- <u>, , , , , , , , , , , , , , , , , , , </u>	mg/L %REC	1	Analyst: NSE 11/1/2007 5:56:15 AM 11/1/2007 5:56:15 AM
					,	
				·		
	,					
ualifiers: * Value exceeds Maximum Cor	itaminant Lev	vel		B Analvte	detected in the a	ssociated Method Blank
E Value above quantitation range	je			H Holding	g times for prepar	ation or analysis exceeded

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- MCL Maximum Contaminant Level
- RL Reporting Limit

11

29-Nov-07

Hall Environmental Analysis Laboratory, Inc.

Lab Order:	0710559			,			
Client:	San Juan Refining				DATES R	EPORT	
Project:	River Terrace 4th Qti	r 2007					
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0710559-01A	TP-13	10/30/2007 8:35:00 AM	Aqueous	EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
0710559-01B				EPA 6010B: Total Recoverable Metals	14339	11/8/2007	11/12/2007
0710559-02A	TP-12	10/30/2007 9:00:00 AM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		10/31/2007
				EPA Method 8021B: Volatiles	R25852		10/31/2007
0710559-02B				EPA 6010B: Total Recoverable Metals	14339	11/8/2007	11/12/2007
0710559-03A	TP-11	10/30/2007 9:25:00 AM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		11/1/2007
				EPA Method 8021B: Volatiles	R25852		11/1/2007
0710559-03B				EPA 6010B: Total Recoverable Metals	14339	11/8/2007	11/12/2007
0710559-04A	TP-10	10/30/2007 10:25:00 AM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		11/1/2007
				EPA Method 8021B: Volatiles	R25852		11/1/2007
0710559-04B				EPA 6010B: Total Recoverable Metals	14339	11/8/2007	11/12/2007
0710559-05A	TP-3	10/30/2007 10:40:00 AM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		11/1/2007
				EPA Method 8021B: Volatiles	R25852		11/1/2007
0710559-05B				EPA 6010B: Total Recoverable Metals	14339	11/8/2007	11/12/2007
0710559-06A	TP-7	10/30/2007 11:00:00 AM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		11/1/2007
				EPA Method 8021B: Volatiles	R25852		11/1/2007
0710559-06B				EPA 6010B: Total Recoverable Metals	14339	11/8/2007	11/12/2007
0710559-07A	DW #1	10/30/2007 1:20:00 PM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007

Page 1 of 2

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29-Nov-07

Lab Order:	0710559			1			
Client:	San Juan Refining				DATESR	EPORT	
Project:	River Terrace 4th Qt	r 2007					
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0710559-07A	DW #1	10/30/2007 1:20:00 PM	Aqueous	EPA Method 8015B: Gasoline Range	R25852		11/1/2007
				EPA Method 8021B: Volatiles	R25852		11/1/2007
0710559-07B				EPA 6010B: Total Recoverable Metals	14339	11/8/2007	11/12/2007
				EPA Method 7470: Mercury	14433	11/19/2007	11/19/2007
0710559-08A	MW #49	10/30/2007 2:05:00 PM		EPA Method 8015B: Diesel Range	14307	11/5/2007	11/6/2007
				EPA Method 8015B: Gasoline Range	R25852		11/1/2007
				EPA Method 8021B: Volatiles	R25852		11/1/2007
0710559-08B				EPA 6010B: Total Recoverable Metals	14339	11/8/2007	11/12/2007
0710559-09A	Field Blank	10/30/2007 2:15:00 PM		EPA Method 8015B: Gasoline Range	R25852		11/1/2007
				EPA Method 8021B: Volatiles	R25852	·	11/1/2007
0710559-10A	Trip Blank		Trip Blank	EPA Method 8015B: Gasoline Range	R25852		

13

Page 2 of 2

# QA/QC SUMMARY REPORT

ient: Project:

San Juan Refining River Terrace 4th Qtr 2007

Work Order: 0710559 PQL %Rec LowLimit HighLimit %RPD RPDLimit Qual Analyte Result Units Method: EPA Method 8015B: Diesel Range Sample ID: MB-14307 MBLK Batch ID: 14307 Analysis Date: 11/5/2007 10:12:38 PM **Diesel Range Organics (DRO)** ND mg/L 1.0 Motor Oil Range Organics (MRO) ND mg/L 5.0 140 Surr: DNOP 58 1.234 mg/L 0 123 Batch ID: Sample ID: LCS-14307 LCS 14307 Analysis Date: 11/5/2007 10:47:02 PM 74 157 **Diesel Range Organics (DRO)** 5.000 mg/L 1.0 100 Surr: DNOP 0.5923 mg/L 0 118 58 140 Sample ID: LCSD-14307 LCSD Batch ID: 14307 Analysis Date: 11/5/2007 11:21:27 PM **Diesel Range Organics (DRO)** mg/L 1.0 104 74 157 3.79 23 5.193 0 Surr: DNOP 0.6087 mg/L 0 122 58 140 0 EPA Method 8015B: Gasoline Range Method: Sample ID: 5ML RB MBLK Batch ID: R25852 Analysis Date: 10/31/2007 9:10:13 AM Gasoline Range Organics (GRO) ND 0.050 mg/L Surr: BFB 18.19 mg/L 0 91.0 79.2 121 LCS Batch ID: R25852 Sample ID: 2.5UG GRO LCS Analysis Date: 10/31/2007 7:56:41 PM 0.050 80 Gasoline Range Organics (GRO) 0.4336 mg/L 83.0 115 Surr: BFB\* 20.71 mg/L 0 104 79.2 121



#### Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Project: River Terrac	e 411 Qir 200	J7							Work	Order	0710559
Analyte	Result	Units	PQL	%Rec	LowLimit	HighL	imit	%RPD	RPD	Limit	Qual
Method: EPA Method 8021B: V	/olatiles				<u> </u>						
Sample ID: 0710559-05A MSD		MSD			Batch	ID: R	25852	Analysis (	Date:	11/1/2	2007 3:26:26 A
Methyl tert-butyl ether (MTBE)	18.45	µg/L	2.5	92.3	51.2	138		0.433	28		
Benzene	19.87	µg/L	1.0	99.4	85.9	113		1.30	27	,	
Foluene	18.96	µg/L	1.0	94.8	86.4	113		0.819	19	}	
Ethylbenzene	18.63	µg/L	1.0	93.1	83.5	118		1.95	10	)	
(ylenes, Total	54.54	µg/L	2.0	90.9	83.4	122		1.63	13		
Surr: 4-Bromofluorobenzene	17.87	µg/L	0	89.3	70.2	105		0	0		
Sample ID: 5ML RB		MBLK			Batch	ID: R	25852	Analysis [	Date:	10/31/2	2007 9:10:13 A
Methvi tert-butvl ether (MTBE)	ND	ua/L	2.5								
Benzene	ND	ua/L.	1.0								
Toluene	ND	ua/L	1.0								
Ethvibenzene	ND	ua/L	1.0								
Xvienes Total	ND	ug/l	2.0								
Surr: 4-Bromofiuorobenzene	16.28	ua/l	0	81 4	70.2	105					
Sample ID: 100NG BTEX I CS	10.20	LCS	v	01.1	Batch	ID: R	25852	Analysis (	Date:	10/31/2	2007 8:56:39 PI
	40.70		0.5	00 6	51.0	120					
	19.72	μg/L	2.5	90.0	01.Z	110					
Senzene	19.94	µg/L	10	99.7	00.9	113					
	19.42	µg/L	1.0	97.1	80.4 02.5	113					
	18.95	µg/L	1.0	93.9	03.3	10					
Cylenes, Fotal	55.95	µg/L	2.0	92.7	70.0	105					
Suff: 4-Bromofluorobenzene	17.92	µg/L	U	89.6	/U.Z	105		A malunia (	<b>D</b> -4	A A 14 16	007 0.50.20 4
Sample ID: 0710559-05A MS		1412			Datch	ID. R	20002	Analysis	Jale	1 1/ 1/4	2007 2.50.30 AI
Methyl tert-butyl ether (MTBE)	18.53	µg/L	2.5	92.7	51.2	138					
Benzene	20.13	µg/L	1.0	101	85.9	113					
Toluene	19.12	µg/L	1.0	95.6	86.4	113					*
Ethylbenzene	18.99	µg/L	1.0	95.0	83.5	118					
Xylenes, Total	55.44	µg/L	· 2.0	92.4	83.4	122					
Surr: 4-Bromofluorobenzene	18.16	µg/L	0	90.8	70.2	105					
Method: EPA Method 7470: M	ercurv			. •	· X .						
Sample ID: 0710559-07B MSD		MSD			Batch	ID:	14433	Analysis	Date:	11/19/2	2007 3:31:59 P
Mercurv	0.004172	ma/L	0.00020	81.5	75	125		0.356	20	)	
Sample ID: MB-14433		MBLK			Batch	ID:	14433	Analysis	Date:	11/19/	2007 2:58:00 P
Marcupy		ma/l	0 00020								
Sample ID: 1 CS 44422	NU	ICS	0.00020		Ratch	ın.	11122	Analysis	Date:	11/10/	2007 2.50.44 0
Sample ID: LUS-14433		103			Daten		14433	Analysis	Dale.	11/19/.	2001 2.09.44 P
Mercury	0.005056	mg/L	0.00020	99.3	80	120					
Sample ID: 0710559-07B MS		MS			Batch	ID:	14433	Analysis	Date:	11/19/	2007 3:30:15 P
Mercury	0 004157	ma/L	0.00020	81.2	75	125					

# **OA/OC SUMMARY REPORT**

E Value above quantitation range

Qualifiers:

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

Holding times for preparation or analysis exceeded Н

Not Detected at the Reporting Limit ND

S Spike recovery outside accepted recovery limits

15

Date: 29-Nov-07

# QA/QC SUMMARY REPORT

Plient: Project: San Juan Refining River Terrace 4th Qtr 2007

Work Order: 0710559

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RI	PDLimit Qual
Method: EPA 6010B: Total Rec	overable Me	etals						
Sample ID: 0710559-08B MSD		MSD			Batch ID	D: 14339	Analysis Date:	11/12/2007 10:11:07 AM
Lead	0.5087	mg/L	0.0050	102	75	125	0.589	20
Sample ID: MB-14339		MBLK			Batch ID	D: <b>14339</b>	Analysis Date:	11/12/2007 8:43:31 AM
Lead	ND	mg/L	0.0050	0	0	0		
Sample ID: LCS-14339		LCS			Batch IC	D: 14339	Analysis Date:	11/12/2007 8:46:34 AM
Lead	0.5187	mg/L	0.0050	104	80	120		
Sample ID: 0710559-08B MS		MS			Batch ID	D: 14339	Analysis Date:	11/12/2007 10:09:21 AM
Lead	0.5058	mg/L	0.0050	101	75	125		

#### Qualifiers:

E Value above quantitation range

- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Hall Environmental Analysis La	ooratory, Inc.							
	Sample F	Rece	eipt Ch	necklist				U
Client Name SJR				Date and Tim	ne Received:		10/31/2007	
Work Order Number 0710559				Received b	y ARS	,		
Checklist completed b	<u>}</u>	÷	Date	31/07-				
Matrix	Carrier name	<u>UPS</u>	<u>.</u>					
Shipping container/cooler in good condition?		Yes	$\checkmark$	No 🗌	Not Presen	nt 🗌		
Custody seals intact on shipping container/coole	r?	Yes	$\checkmark$	No 🗌	Not Presen	nt 🗌	Not Shipped	
Custody seals intact on sample bottles?		Yes		No 🗔	N/A			
Chain of custody present?		Yes	$\checkmark$	No 🗌				
Chain of custody signed when relinquished and	received?	Yes	$\checkmark$	No				
Chain of custody agrees with sample labels?		Yes	$\checkmark$	No 🗌				
Samples in proper container/bottle?		Yes		No 🗌				
Sample containers intact?		Yes	$\checkmark$	No 🗌				
Sufficient sample volume for indicated test?		Yes	$\checkmark$	No 🗌				
All samples received within holding time?		Yes		No				
Water - VOA vials have zero headspace?	No VOA vials submi	tted		Yes 🗹	No	].		•
Water - Preservation labels on bottle and cap ma	atch?	Yes	$\checkmark$	No 🗌	N/A			
Water - pH acceptable upon receipt?		Yes	✓	No 🗌	<b>N/A</b>			
Container/Temp Blank temperature?			5°	4° C ± 2 Accep	otable			
COMMENTS:				If given sufficie	nt time to cool			
<u></u>								-
Client contacted	Date contacted:			Pe	rson contacted	d t		
Contacted by:	Regarding							
Comments:								
	-14						······································	
Corrective Action								
			<u></u>					
						<u></u>		
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	HALL ENVIRONMENTAL	4901 Hawkins NE, Suite D	Albuquerque, New Mexico a7 109 Tel. 505.345.3975 Fax 505.345.4107 www.hallanvironmental.com				or N)	9 (1) 906 9 (1) 906	səqəbə səqəbə ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )	04 Por Btals stals incides AOV-in AOV-in AOV-in AOV-in AOV-in AOV-in AOV-in	(1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1941) (1	Alir B           8310           826           826           827           808           826           827           808           826           827           8310           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321           8321		X	/	×		×		×				X		
1						ابلہ)	sel) 21}	08) e <sup>4</sup> iloseð) eiO\seá	14'1) 8'1) 28 (C 16H	+ 381 + 381 + 387 19 bor 19 bor	( +	ED8 Hd1 Hd1 81EX 81EX	+ +		XX		XXX		XX		XX		ХХ		Remarks: Bage 1 of 2	<b>`</b>
<b>C</b>	GA/ QC Package:	Other:	Project Name:	Riber Perlace 4th GTR. 2007	Project #:		Project Manage;	( inder Hurlado	Some / Ron K	Sample Temperature: $5^{\epsilon}$	Preservative HEAI No.		4-V04- X	1-500-6 X 1	4-VOA X 2	1-Sond X 2	4-UDA X X 3	1-500ml X 300ml	46A X 4	1-Shop X 4	4-10A X 5	S X Junes 1	4-40A X 6	1-520/ X b	Received By: (Signature) Received By: (Signature)	
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		CHAIR	Client: SA		Address: 朱	Z			Phone #: S	Fax #: 50		naut	10-30-7 E	c	5		0						11		Date: Ti Date: Ti	-

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com		(N 	JO (J) 998 2808) S, 2808) S, 2808) S,	esdsbs (H) (H) (H) (H)	A or P, etals Cl, NO Vicides DA) Vicides A A C A C A C A C A C A C A C A C A C	M 8 A70 (PW B310 (PW Anions (F, V) 8088 (V B250 (Y B270 (Sei V) 2088 V)	X				<u></u>			Analyze Ekol DKO mall sumple		
		۱) ۱) ۱) ۱)	inilozsé (6asoliné ب <del>ه</del> (802	04'1) 18'1) - 16H ( - 16H (	H 3811 194 40 194 40 194 40	EDB (Wef LbH (Wef 3LEX + W 3LEX + W			XX		XX				Remarks: PAGE 20F3	<b>-</b>
Da / DC Package: Std 🗖 Level 4 🖉 Other: Project Name:	Killer/lefface 4th Care-2007	Project Manager:		Sampler: CAK / R.M.K	Sample Temperature: 5 °	Number/Volume Heal No.	4-VOA X X 401-4	t X Jues-1	4-VOA X 8	B X Mas-1	4-10A-1 X 9				Received By (Signature) Received By: (Signature)	)
CHAIN-OF-CUSTODY RECORD	Address: # 57 7/ 4990	Bloomfredd, NM	87413	Phone #: 505-632~41(0)	Fax#: 505~103.3911	Date Time Matrix Sample I.D. No.	10-3007 120, HZU DW#1		arco mutado		215m Rield Blank	Trip Blank AS			Date: Time: Relinquished By: (Bignature) Date: Time: Relinquished By: (Signature)	

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#### COVER LETTER

Thursday, March 01, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace - 1st Quarter 2007-VS

Order No.: 0702317

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 2/27/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

**Date:** 01-Mar-07

CLIENT:San Juan RefiningProject:River Terrace - 1st Quarter 2007-VSLab Order:0702317

# CASE NARRATIVE

"S" flags denote that the surrogate was not recoverable due to sample dilution or matrix interferences.

Page 1 of 1

CLIENT:San Juan RefiningLab Order:0702317Project:River Terrace - 1st Quarter 2007-VSLab ID:0702317-01

**Date:** 01-Mar-07

 Client Sample ID:
 TP-8

 Collection Date:
 2/26/2007 9:30:00 AM

 Date Received:
 2/27/2007

 Matrix:
 AIR

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	NGE	·		······································	Analyst: NSB
Gasoline Range Organics (GRO)	7100	500	µg/L	100	2/27/2007 7:32:37 PM
Surr: BFB	122	84.5-129	%REC	100	2/27/2007 7:32:37 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	5.0	µg/∟	50	2/27/2007 2:55:54 PM
Toluene	9.5	5.0	μg/L	50	2/27/2007 2:55:54 PM
Ethylbenzene	130	5.0	µg/L	50	2/27/2007 2:55:54 PM
Xylenes, Total	1400	30	µg/L	100	2/27/2007 7:32:37 PM
Surr: 4-Bromofluorobenzene	99.4	70.2-105	%REC	50	2/27/2007 2:55:54 PM

Qualifiers:

\* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 2/10
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 01-Mar-07

CLIENT:San Juan RefiningClient Sample ID:TP-5Lab Order:0702317Collection Date:2/26/2007 10:10:00 AMProject:River Terrace - 1st Quarter 2007-VSDate Received:2/27/2007Lab ID:0702317-02Matrix:AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	NGE					Analyst: NSB
Gasoline Range Organics (GRO)	6100	250		μg/L	50	2/27/2007 3:56:28 PM
Surr: BFB	133	84.5-129	S	%REC	50	2/27/2007 3:56:28 PM
EPA METHOD 8021B: VOLATILES						Anaiyst: <b>NS</b> B
Benzene	ND	5.0		µg/L	50	2/27/2007 3:56:28 PM
Toluene	9.8	5.0		µg/L	50	2/27/2007 3:56:28 PM
Ethylbenzene	c 23	5.0		µg/L	50	.2/27/2007 3:56:28 PM
Xylenes, Total	1000	. 15		hð\r	50	2/27/2007 3:56:28 PM
Surr: 4-Bromofluorobenzene	96.6	70.2-105		%REC	50	2/27/2007 3:56:28 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- RL Reporting Limit

В

Н

Analyte detected in the associated Method Blank

MCL Maximum Contaminant Level

Holding times for preparation or analysis exceeded

Date: 01-Mar-07

CLIENT:San Juan RefiningClient Sample ID:TP-2Lab Order:0702317Collection Date:2/26/2007 10:35:00 AMProject:River Terrace - 1st Quarter 2007-VSDate Received:2/27/2007Lab ID:0702317-03Matrix:AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	ANGE					Analyst: NSB
Gasoline Range Organics (GRO)	88	5.0		µg/L	1	2/27/2007 11:52:07 AM
Surr: BFB	131	84.5-129	S	%REC	1	2/27/2007 11:52:07 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.10		hð\r	1	2/27/2007 11:52:07 AM
Toluene	ND	0.10		µg/L	1	2/27/2007 11:52:07 AM
Ethylbenzene	1.1	0.10		µg/L	1	2/27/2007 11:52:07 AM
Xylenes, Total	17	0.30		µg/L	1	2/27/2007 11:52:07 AM
Surr: 4-Bromofluorobenzene	<del>9</del> 8.7	70.2-105		%REC	1	2/27/2007 11:52:07 AM

Oua	lifi	ier	s:
- Y			

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
   I Analyte detected below quantitation
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- 4/10
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

**CLIENT:** San Juan Refining Lab Order: 0702317 **Project:** River Terrace - 1st Quarter 2007-VS Lab ID: 0702317-04

Date: 01-Mar-07

Client Sample ID: TP-6 Collection Date: 2/26/2007 12:35:00 PM Date Received: 2/27/2007 Matrix: AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	NGE					Analyst: NSB
Gasoline Range Organics (GRO)	98	10		µg/L	2	<u>, 2/27/2007 6:31:47 PM</u>
Surr: BFB	198	84.5-129	S	%REC	2	2/27/2007 6:31:47 PM
EPA METHOD 8021B: VOLATILES						Analyşt: NSB
Benzene	ND	0.20		µg/L	2	2/27/2007 6:31:47 PM
Toluene	ND	0.20		µg/L	2	2/27/2007 6:31:47 PM
Ethylbenzene	1.0	0.20		µg/L	2	2/27/2007 6:31:47 PM
Xylenes, Total	13	0.60		µg/L	2	2/27/2007 6:31:47 PM
Surr: 4-Bromofluorobenzene	94.6	70.2-105		%REC	2	2/27/2007 6:31:47 PM

Qualifiers:

\*

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits S .¹
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- RL Reporting Limit

5/10

CLIENT:San Juan RefiningLab Order:0702317Project:River Terrace - 1st Quarter 2007-VS

Lab ID:

0702317-05

**Date:** 01-Mar-07

-----

 Client Sample ID:
 TP-1

 Collection Date:
 2/26/2007 1:00:00 PM

 Date Received:
 2/27/2007

 Matrix:
 AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAN	GE					Analyst: NSB
Gasoline Range Organics (GRO)	7300	250		µg/L	50	2/27/2007 4:27:21 PM
Surr: BFB	130	84.5-129	S	%REC	50	2/27/2007 4:27:21 PM
EPA METHOD 8021B: VOLATILES						Analyst: <b>NSB</b>
Benzene	6.1	5.0		µg/L	50	2/27/2007 4:27:21 PM
Toluene	8.2	5.0		µg/L	50	2/27/2007 4:27:21 PM
Ethylbenzene	150	5.0		µg/L	50	2/27/2007 4:27:21 PM
Xylenes, Total	1200	30		µg/L	100	2/28/2007 11:08:28 AM
Surr: 4-Bromofluorobenzene	97.8	70.2-105		%REC	50	2/27/2007 4:27:21 PM

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 5 of 7

6/10

**CLIENT:** San Juan Refining Lab Order: 0702317 **Project:** River Terrace - 1st Quarter 2007-VS Lab ID: 0702317-06

Date: 01-Mar-07

Client Sample ID: TP-9 Collection Date: 2/26/2007 1:30:00 PM Date Received: 2/27/2007 Matrix: AIR

Analyses	Result	PQL	Qual U	Jnits	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	NGE	••••••••••••••••••••••••••••••••••••••				Analyst: NSB
Gasoline Range Organics (GRO)	290	5.0	۲	ıg/L	1	2/27/2007 12:22:22 PM
Surr: BFB	168	84.5-129	S 9	%REC	1	2/27/2007 12:22:22 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.10	ł	Jg/L	1	2/27/2007 12:22:22 PM
Toluene	0.15	0.10	ł	ug/L	1	2/27/2007 12:22:22 PM
Ethylbenzene	4.3	0.10	ŀ	ug/L	1	2/27/2007 12:22:22 PM
Xylenes, Total	41	1.5	ŀ	ug/L	5	2/27/2007 7:02:24 PM
Surr: 4-Bromofluorobenzene	104	70.2-105	c	%REC	1	2/27/2007 12:22:22 PM

Qualifiers:

¥

Value exceeds Maximum Contaminant Level

Έ Value above quantitation range J

Analyte detected below quantitation limits

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

7/10

Page 6 of 7

Date: 01-Mar-07

CLIENT:	San Juan Refining			С	lient San	ple ID:	TP-12	
Lab Order:	0702317				Collectio	n Date:	2/26/2	007 2:20:00 PM
Project:	River Terrace - 1st Quarter	2007-VS			Date Re	eceived:	2/27/2	007
Lab ID:	0702317-07					Matrix:	AIR	
Analyses	R	esult	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD	8015B: GASOLINE RANGE		<u></u>					Analyst: NSB
Gasoline Rang	e Organics (GRO)	61	5.0		µg/L		1	2/27/2007 12:52:43 PM

Surr: BFB	128	84.5-129	%REC	1	2/27/2007 12:52:43 PM
EPA METHOD 8021B: VOLATILES					Analyst: <b>NSB</b>
Benzene	ND	0.10	µg/L	1	2/27/2007 12:52:43 PM
Toluene	ND	0.10	µg/L	1	2/27/2007 12:52:43 PM
Ethylbenzene	1.1	0.10	µg/L	· 1	2/27/2007 12:52:43 PM
Xylenes, Total	11	0.30	µg/L	1	2/27/2007 12:52:43 PM
Surr: 4-Bromofluorobenzene	97.2	70.2-105	%REC	1	2/27/2007 12:52:43 PM

Qualifiers:

\* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- 8/10
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 7 of 7

# **QA/QC SUMMARY REPORT**

Client: San Juan Refi	ning							
Project: River Terrace	- 1st Qua	rter 2007-VS	5				Work	Order: 070231
Analyte	Result	Units	PQL	%Rec	LowLimit Hi	ghLimit	%RPD RPI	DLimit Qual
Method: SW8015					·····			
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R22631	Analysis Date:	2/27/2007 7:28:51 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R22631	Analysis Date:	2/27/2007 9:04:06 PM
Gasoline Range Organics (GRO)	0.5120	mg/L	0.050	102	80	115		· · ·
Method: SW8021								
Sample ID: 5ML REAGENT BLA	1.14	MBLK			Batch ID:	R22631	Analysis Date:	2/27/2007 7:28:51 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
1,2,4-Trimethylbenzene	ND	µg/∟	1.0					. *
1,3,5-Trimethylbenzene	ND	µg/L	1.0					
Sample ID: 100NG BTEX LCS		LCS			Batch ID:	R22631	Analysis Date:	2/27/2007 8:02:49 PM
Benzene	20.88	µg/L	1.0	104	85.9	113		
Toluene	20.77	μg/L	1.0	104	86.4	113		
Ethylbenzene	21.09	µg/L	1.0	105	83.5	118		
Xylenes, Total	43.04	µg/L	2.0	108	83.4	122		
1,2,4-Trimethylbenzene	20.33	µg/L	1.0	102	83.5	115		
1,3,5-Trimethylbenzene	20.93	µg/L	1.0	105	85.2	113		
Method: SW8015								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R22641	Analysis Date:	2/28/2007 8:40:46 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R22641	Analysis Date:	2/28/2007 4:43:18 PM
Gasoline Range Organics (GRO)	0.5440	mg/L	0.050	109	80	115		
Method: SW8021								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID	R22641	Analysis Date:	2/28/2007 8:40:46 AM
Benzene	ND	μg/L	1.0					•
Toluene	ND	µg/L	1.0					• •
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
1,2,4-Trimethylbenzene	ND	µg/L	1.0					
1,3,5-Trimethylbenzene	ND	µg/L	1.0					
Sample ID: 100NG BTEX LCS		LCS			Batch ID	: R22641	Analysis Date:	2/28/2007 3:42:30 PM
Benzene	21.61	µg/L	1.0	108	85.9	113		
Toluene	21.25	µg/L	1.0	106	86.4	113		
Ethylbenzene	21.37	µg/L	1.0	107	83.5	118		
Xylenes, Total	45.32	µg/L	2.0	113	83.4	122		
1,2,4-Trimethylbenzene	21.13	μg/L	1.0	106	83.5	115		
1,3,5-Trimethylbenzene	21.80	µg/L	1.0	109	85.2	113		
				•	4			

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - Spike recovery outside accepted recovery limits
  - 9/10

S

Service Services

	Sample	Receip	t Check	list				
Client Name SJR			C	Date and Time	Received:		2/2	27/2007
Work Order Number 0702317				Received by	TLS			
Checklist completed by Signature'			LOS Date	7.07			· .	,
Matrix	Carrier name	<u>UPS</u>						
Shipping container/cooler in good condition?		Yes 🗹	]	No 🗌	Not Present			
Custody seals intact on shipping container/cooler?		Yes 🗹	]	No 🗌	Not Present		Not Shipped	
Custody seals intact on sample bottles?	·	Yes 🗌	]	No 🗌	N/A	$\checkmark$		
Chain of custody present?		Yes 🗹	]	No 🗌				
Chain of custody signed when relinquished and rece	eived?	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 🗌				
Water - VOA vials have zero headspace?	No VOA vials subr	nitted 🗹	] .	Yes 🗌	No 🗌			
Water - Preservation labels on bottle and cap match	ו?	Yes 🗌	]	No 🗌	N/A 🗹			
Water - pH acceptable upon receipt?		Yes 🗌	]	No 🗌	N/A 🗹			
Container/Temp Blank temperature?		4°	4°	C ± 2 Accepta	able			
COMMENTS:			lf	given sufficien	t time to cool.			
Client contacted Da	ate contacted:	·····		Per	son contacted		· · · · · · · · · · · · · · · · · · ·	
Contacted by: Re	egarding							
Commonto								
				• <u> </u>	,,,,,,,,,,,			
· · · · · · · · · · · · · · · · · · ·	- <u></u>							· · ·
Corrective Action						•, ·	·····	
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HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com	EDD (Method 504:1)         EDD (Method 504:1)         EDD (Method 502)         HA9 or PAH)         B310 (PVA or PAH)         Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )         Second Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )         Main of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the sector of the se	
	EDB (Method 80158 (Gasoline Only)       TPH Method 80158 (Gasoline Only)       TPH Method 80158 (Gasoline Only)	Remarks:
Dther: Dther: Project Name: Ruler / ettaco - ) 2072-2007-VS Project #:	Project Manager: Project Manager: Sample Kemperature: Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> 1-Tecl kyr 1-Tecl kyr 0-10-2317 1-7 1-7 1-7 1-7 1-7 1-7 1-7 1	Received By: (Signature) 2(2-7/3) Ann 3 (1002) Regeived By: (Signature)
F-CUSTODY RECORD	Matrix Sample I.D. No. Matrix Sample I.D. No. Matrix Sample I.D. No.	Relinquished By: (Signatura) M. M. M. (M. (TUC) Relinquished By: (Signature)
CHAIN-O Client: JAN	Phone # 505 Fax #: 505 Date Time # 505	Hate: Time: Adv 7 750 Date: The



#### COVER LETTER

Thursday, March 01, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505)-632-4161 FAX (505) 632-3911

RE: River Terrace - 1st Quarter 2007- VS

Dear Cindy Hurtado:

Order No.: 0702369

Hall Environmental Analysis Laboratory, Inc. received 6 sample(s) on 2/28/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE III Suite D III Albuquerque, NM 87109 505.345.3975 III Fax 505.345.4107 www.hallenvironmental.com

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0702369 River Terrace - 1st Qu 0702369-01	arter 2007- VS	5	C	lient Sar Collectio Date R	nple ID: on Date: eceived: Matrix:	TP- 2/27 2/28 AIF	13 7/2007 9:00:00 AM 8/2007
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE							Analyst: NSB	
Gasoline Range	e Organics (GRO)	24	5.0		µg/L		1	2/28/2007 11:38:42 AM
Surr: BFB		130	84.5-129	S	%REC		1	2/28/2007 11:38:42 AM
EPA METHOD	8021B: VOLATILES							Analyst: <b>NSB</b>
Benzene		ND	0.10		µg/L		1	2/28/2007 11:38:42 AM
Toluene		ND	0.10		µg/L		1	2/28/2007 11:38:42 AM
Ethylbenzene	· · ·	0.20	0.10		µg/L		1	2/28/2007 11:38:42 AM
Xyienes, Total		2.9	0.30		µg/L		1	2/28/2007 11:38:42 AM
Surr: 4-Brom	ofluorobenzene	95.4	70.2-105		%REC	2° 84	1	2/28/2007 11:38:42 AM
								· · · · ·

Qualifiers:	*	Value exceeds Maximum Contaminant Level	В	Analyte detected in t	he associated Method Blank
	Е	Value above quantitation range	Н	Holding times for pr	eparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contamir	ant Level
1	ND	Not Detected at the Reporting Limit	RL	Reporting Limit	. D
	S	Spike recovery outside accepted recovery limits			Page

1/8

Page 1 of 6

**Date:** 01-Mar-07

•

CLIENT:	San Juan Refining	Client Sample ID:	TP-11
Lab Order:	0702369	<b>Collection Date:</b>	2/27/2007 9:30:00 AM
Project:	River Terrace - 1st Quarter 2007- VS	Date Received:	2/28/2007
Lab ID:	0702369-02	Matrix:	AIR

•

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	ANGE				Analyst: NSB
Gasoline Range Organics (GRO)	11	5.0	µg/L	1	2/28/2007 12:08:57 PM
Surr: BFB	119	84.5-129	%REC	1	2/28/2007 12:08:57 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	1	2/28/2007 12:08:57 PM
Toluene	ND	0.10	µg/L	1	2/28/2007 12:08:57 PM
Ethylbenzene	0.11	0.10	µg/L	1	2/28/2007 12:08:57 PM
Xylenes, Total	1.4	0.30	µg/L	1	2/28/2007 12:08:57 PM
Surr: 4-Bromofluorobenzene	89.2	70.2-105	%REC	1	2/28/2007 12:08:57 PM

Qualifiers:

\* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

Date: 01-Mar-07

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

2/8
Date: 01-Mar-07

CLIENT:San Juan RefiningClient San San StateLab Order:0702369CollectProject:River Terrace - 1st Quarter 2007- VSDateLab ID:0702369-03Collect

Client Sample ID: TP-3 Collection Date: 2/27/2007 10:00:00 AM Date Received: 2/28/2007 Matrix: AIR

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	ANGE				Analyst: NSB
Gasoline Range Organics (GRO)	13	5.0	µg/L	1	2/28/2007 12:39:08 PM
Surr: BFB	117	84.5-129	%REC	1	2/28/2007 12:39:08 PM
EPA METHOD 8021B: VOLATILES					Analyst: <b>NSB</b>
Benzene	ND	0.10	hð\r	1	2/28/2007 12:39:08 PM
Toluene	ND	0.10	µg/L	1	2/28/2007 12:39:08 PM
Ethylbenzene	0.11	0.10	µg/L	1	2/28/2007 12:39:08 PM
Xylenes, Total	1.2	0.30	µg/L	1	2/28/2007 12:39:08 PM
Surr: 4-Bromofluorobenzene	85.7	70.2-105	%REC	1	2/28/2007 12:39:08 PM

Qualifiers:

\*

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall Envir	conmental Analy	<b>c. D</b> :	ate:	01-Mar-07					
CLIENT:	San Juan Refining	· · · ·		Client Sample	ID:	TP-10			
Lab Order: 0702369				Collection D	ate:	2/27/2007 10:30:00 AM			
Project:	River Terrace - 1st		Date Receiv	ed:	2/28/2007				
Lab ID:	0702369-04			Mat	rix:	AIR			
Analyses		Result	PQL	Qual Units		DF	Date Analyzed		
EPA METHOD	8015B: GASOLINE RA	NGE					Analyst: NSB		
Gasoline Rang	e Organics (GRO)	6.0	5.0	µg/L		1	2/28/2007 1:09:21 PM		
Surr: BFB		116	84.5-129	%REC		1	2/28/2007 1:09:21 PM		

0.10

0.10

0.10

0.30

70.2-105

µg/L

µg/L

µg/L

µg/L

%REC

1

1

1

1

1

ND

ND

ND

0.94

86.5

## Hall Environmental Analysis Laboratory Inc.

EPA METHOD 8021B: VOLATILES

Surr: 4-Bromofluorobenzene

Benzene

Toluene

Ethylbenzene

Xylenes, Total

7

\* Qualifiers:

Value exceeds Maximum Contaminant Level

Value above quantitation range Е

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Analyst: NSB

2/28/2007 1:09:21 PM

Hall	Env	ironme	ntal	Ana	lysis	Labor	atory,	Inc.
					•		•/ /	

CLIENT:San Juan RefiningLab Order:0702369Project:River Terrace - 1st Quarter 2007- VSLab ID:0702369-05

Date: 01-Mar-07

Client Sample ID: MW #49 Collection Date: 2/27/2007 12:40:00 PM Date Received: 2/28/2007 Matrix: AIR

Analyses	Result	PQL (	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	µg/L	1	2/28/2007 1:39:39 PM
Surr: BFB	116	84.5-129	%REC	1	2/28/2007 1:39:39 PM
EPA METHOD 8021B: VOLATILES			-		Analyst: NSB
Benzene	ND	0.10	µg/L	1	2/28/2007 1:39:39 PM
Toluene	ND	0.10	µg/L	1	2/28/2007 1:39:39 PM
Ethylbenzene	ND	0.10	µg/L	1	2/28/2007 1:39:39 PM
Xylenes, Total	ND	0.30	µg/L	1	2/28/2007 1:39:39 PM
. Surr: 4-Bromofluorobenzene	86.6	70.2-105	%REC	1	2/28/2007 1:39:39 PM

Qualifiers:

\*

Е

J

Value exceeds Maximum Contaminant Level

Value above quantitation range

Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 5 of 6

CLIENT:San Juan RefiningLab Order:0702369Project:River Terrace - 1st Quarter 2007- VSLab ID:0702369-06

Date: 01-Mar-07

 Client Sample ID:
 DW #1

 Collection Date:
 2/27/2007 1:30:00 PM

 Date Received:
 2/28/2007

 Matrix:
 AJR

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	µg/L	1	2/28/2007 2:10:11 PM
Surr: BFB	<b>11</b> 7	84.5-129	%REC	1	2/28/2007 2:10:11 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	1	2/28/2007 2:10:11 PM
Toluene	ND	0.10	µg/L	1	2/28/2007 2:10:11 PM
Ethylbenzene	ND	0.10	µg/L	1	2/28/2007 2:10:11 PM
Xylenes, Total	ND	0.30	µg/L	1	2/28/2007 2:10:11 PM
Surr: 4-Bromofluorobenzene	87.0	70.2-105	%REC	1	2/28/2007 2:10:11 PM

<b>0</b>	11 Camer
	IIII III III III III III III III III I

\* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 6 of 6

Hall Environmental	Dat	<b>Date:</b> 01-Mar-07						
		QA/Q	C SU	MMA	RY REP	PORT		
Client: San Juan Refi Project: River Terrace	ining - 1st Qua	rter 2007- V	S				Work	Order: 070236
Analyte	Result	Units	PQL	%Rec	LowLimit Hi	ghLimit	%RPD RPE	DLimit Qual
Method: SW8015 Sample ID: 5ML REAGENT BLA	<u> </u>	MBLK			Batch ID:	R22641	Analysis Date:	2/28/2007 8:40:46 AM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	ND	mg/L LCS	0.050		Batch ID:	R22641	Analysis Date:	2/28/2007 4:43:18 PM
Gasoline Range Organics (GRO)	0.5440	mg/L	0.050	109	80	115		
Method: SW8021 Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R22641	Analysis Date:	2/28/2007 8:40:46 AM
Benzene Toluene	ND ND	µg/L µg/L	1.0 1.0					
Xylenes, Total 1,2,4-Trimethylbenzene		μg/L μg/L	2.0 1.0					
1,3,5-Trimethylbenzene Sample ID: 100NG BTEX LCS	ND	μg/L LCS	1.0		Batch ID:	R22641	Analysis Date:	2/28/2007 3:42:30 PM
Benzene	21.61	μg/L	1.0	108	85.9	113		
Toluene	21.25	µg/L	1.0	106	86.4	113		
Ethylbenzene	21.37	µg/L	- 1.0	107	83.5	118		
Xylenes, Total	45.32	µg/L	2.0	113	83.4	122		
1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	21.13 21.80	µg/L µg/L	1.0 1.0	106 109	83.5 85.2	115 113		

Е Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

Holding times for preparation or analysis exceeded Н ND

1.

- Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 7/8

Page 1

	Sample Receipt Ch	necklist			
lient Name SJR		Date and Tim	2/28	/2007	
Work Order Number 0702369		Received b	y / TLS		
Checklist completed by Larry SL	Jeb . Date	95,07	<u> </u>		
Matrix	Carrier name UPS				
Shipping container/cooler in good condition?	Yes 🔽	No 🗌	Not Present		
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗌	Not Present	Not Shipped	
Custody seals intact on sample bottles?	Yes 🗋	No 🗌	N/A		
Chain of custody present?	Yes 🗹	No 🗌			
Chain of custody signed when relinquished and receive	ed? 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 🗔			
Water - VOA vials have zero headspace? No	VOA vials submitted	Yes 💭	No 🗌		
Water - Preservation labels on bottle and cap match?	Yes 🗋	No 🗔	N/A 🔽		
Water - pH acceptable upon receipt?	Yes	No 🗌	N/A 🔽		
Container/Temp Blank temperature?		4° C ± 2 Accep	otable		
COMMENTS:		If given sufficie	ent time to cool.		
		· 			
Client contacted Date	contacted:	 Pe	erson contacted		
Contacted by: Reg	arding				
Comments:	·				
	<u></u>	· · · · · ·			
		· · · · · · · · · · · · · · · · · · ·			
Corrective Action	·. · ·				
			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
······································					

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D	Tel: 505.345.3975 Fax 505.345.4107		ANALYSIS RECUEST	(ÁļL	(1) S(1) (1)	)8) 8, () () () () () () () () () () () () ()	seqsbee seqsbee 7) 3, NO <sup>2</sup> 3, NO <sup>2</sup> 3, NO <sup>2</sup> 3, NO <sup>2</sup> 3, NO <sup>2</sup> 1, TPH 15 15 15 15 15 15 15 15 15 15 15 15 15	1186 + 1186 + 1200 80 1200 80 1000 800	<ul> <li>M → M</li> <li>M + X</li> /ul>	ВТЕ) ВТЕ) ВТЕ) ВОВ В26 В26 В26 В26 В26 В26 В26 В26 В26 В2						X X X				Remarks:
QA/QC Package: Std 🔲 Level 4 🗍 Öther:	Project Name:	River Pertone - 12 BTR 2007 - VS	Project #:		Project Manager:	Cindy Hotado	Sampley 4/ 1 al Bal Krale on	Sample (lemperature: /	Preservative HEAI No	HgCl <sub>2</sub> HNO <sub>3</sub> OTOZ349	1-Tedlar	2	3			<b>&gt;</b>				Regeived By: (Signature) () 28 01 Received By: (Signateure)
CHAIN-OF-CUSTODY RECORD	Client: SAN Juen Refines		Address: 450 RJ 499()	Bloom Fald. NW	61#68		Phone #: 575 . 632-4161	Fax#: 505. 637 -3911		Uate Ilme Matrix Jampie I.U. Ivu.	2.1-11-1-2011 Notice-1-1-1-1-2	11-11 / Jana /	/ 10am / TP-3	10-200 770-10	(1340an / Mul #49	1300 Du #1				Date: Time: Relinguished By: (Signature)

NP 12



#### COVER LETTER

Monday, July 02, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace-2nd Qtr-2007-Vapor

Dear Cindy Hurtado:

Order No.: 0706279

Hall Environmental Analysis Laboratory, Inc. received 13 sample(s) on 6/20/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 # Fax 505.345.4107 www.hallenvironmental.com

**Date:** 02-Jul-07

CLIENT:San Juan RefiningLab Order:0706279Project:River Terrace-2nd QtLab ID:0706279-01	r-2007-Vapor		Client Sample ID Collection Date Date Received Matrix	MW 6/18 6/20 AIR	#49 /2007 10:10:00 AM /2007
Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAN	IGE				Analyst: NSB
Gasoline Range Organics (GRO)	11	5.0	µg/L	1	6/24/2007 8:50:07 PM
Surr: BFB	124	84.5-129	%REC	1	6/24/2007 8:50:07 PM
EPA METHOD 8260B: VOLATILES					Analyst: SMP
Benzene	ND	0.10	µg/L	1	6/25/2007 8:56:06 AM
Toluene	ND	0.10	μg/L	1	6/25/2007 8:56:06 AM
Ethylbenzene	ND	0.10	µg/L	1	6/25/2007 8:56:06 AM
Xylenes, Total	ND	0.30	hā\r	1	6/25/2007 8:56:06 AM
Surr: 1,2-Dichloroethane-d4	101	50.9-168	%REC	1	6/25/2007 8:56:06 AM
Surr: 4-Bromofluorobenzene	106	71.2-123	%REC	1	6/25/2007 8:56:06 AM
Surr: Dibromofluoromethane	91.5	64.7-142	%REC	1	6/25/2007 8:56:06 AM
Surr: Toluene-d8	104	81.9-122	%REC	1	6/25/2007 8:56:06 AM
					1

 Qualifiers:
 \*
 Value exceeds Maximum Contaminant Level
 B
 Analyte detected in the associated Method Blank

 E
 Value above quantitation range
 H
 Holding times for preparation or analysis exceeded

 J
 Analyte detected below quantitation limits
 MCL
 Maximum Contaminant Level

 ND
 Not Detected at the Reporting Limit
 RL
 Reporting Limit

Spike recovery outside accepted recovery limits

S

1/16

Page 1 of 13.

CLIENT:	San Juan Refining		•••	TP- #1					
Lab Order:	0706279			<b>Collection Date:</b>	6/18/2007 11:00:00 AM				
Project:	River Terrace-2nd Qtr-2	2007-Vapor		Date Received:	6/20/2007				
Lab ID:	0706279-02			Matrix:	AIR				
Analyses		Result	PQL Qu	al Units	DF	Date Analyzed			
EPA METHOD	8015B: GASOLINE RANG	E				Analyst: NSB			
Gasoline Rang	e Organics (GRO)	7.4	5.0	µg/L	1	6/25/2007 10:51:09 AM			
Surr: BFB		106	84.5-129	%REC	1	6/25/2007 10:51:09 AM			
EPA METHOD	8260B: VOLATILES					Analyst: SMP			
Benzene		ND	0.10	µg/L	1	6/25/2007 9:33:15 AM			
Toluene		ND	0.10	µg/L	1	6/25/2007 9:33:15 AM			
Ethylbenzene		0.28	0.10	µg/L	1	6/25/2007 9:33:15 AM			
Xylenes, Total		1.0	0.30	µg/L	1	6/25/2007 9:33:15 AM			
Surr: 1,2-Dic	chloroethane-d4	99.4	50.9-168	%REC	1	6/25/2007 9:33:15 AM			
Surr: 4-Brom	nofluorobenzene	101	71.2-123	%REC	1	6/25/2007 9:33:15 AM			
Surr: Dibrom	ofluoromethane	93.1	64.7-142	%REC	1	6/25/2007 9:33:15 AM			
Surr: Toluen	ie-d8	106	81.9-122	%REC	1	6/25/2007 9:33:15 AM			

Date: 02-Jul-07

Qualifiers:

Value exceeds Maximum Contaminant Level \*

Ε Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits S

В Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 2 of 13

Hall Envir	onmental Analys	e: 02	Jul-07			
CLIENT:	San Juan Refining			Client Sample II	: TP-	#8
Lab Order:	0706279			Collection Date	e: 6/18	1 3/2007 12:55:00 PM
Project:	River Terrace-2nd Qu	r-2007-Vapor		Date Received	<b>1</b> : 6/20	)/2007
Lab ID:	0706279-03			Matrix	: Alf	
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: GASOLINE RAN	GE		· · · · · · · · ·		Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	5.0	µg/L	1	6/25/2007 11:21:30 AM
Surr: BFB		107	84.5-129	%REC	1	6/25/2007 11:21:30 AM
EPA METHOD	8260B: VOLATILES					Analyst: SMP
Benzene		ND	0.10	µg/L	1	6/25/2007 10:08:45 AM
Toluene		ND	0.10	µg/L	1	6/25/2007 10:08:45 AM
Ethylbenzene		ND	0.10	µg/L	1	6/25/2007 10:08:45 AM
Xylenes, Total		√ND	0.30	µg/L	1	6/25/2007 10:08:45 AM
Surr: 1,2-Die	chloroethane-d4	104	50.9-168	%REC	1	6/25/2007 10:08:45 AM
Surr: 4-Bron	nofluorobenzene	107	71.2-123	%REC	1	6/25/2007 10:08:45 AM

64.7-142

81.9-122

97.3

102

%REC

%REC

1

1

							_
-lall	Enviro	nmenta	l An	alvsis	Labora	atory.	Inc

Surr: Dibromofluoromethane

Surr: Toluene-d8

В Analyte detected in the associated Method Blank

- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- .RL Reporting Limit

Page 3 of 13

Е Value above quantitation range

Qualifiers:

¥

J

Analyte detected below quantitation limits

Value exceeds Maximum Contaminant Level

- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits S
- 3/16

6/25/2007 10:08:45 AM

6/25/2007 10:08:45 AM

	onnental Analys		ory, me.				
CLIENT:	San Juan Refining		C	Client Sample ID:	TP- #	6	
Lab Order:	0706279			Collection Date:	6/18/2007 1:20:00 PM		
Project:	River Terrace-2nd Qtr	-2007-Vapor		Date Received:	6/20/2	2007	
Lab ID:	0706279-04			Matrix:	AIR		
Analyses		Result	PQL Qual	Units	DF	Date Analyzed	
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB	
Gasoline Rang	e Organics (GRO)	ND	5.0	µg/L	1	6/24/2007 9:20:37 PM	
Surr: BFB		109	84.5-129	%REC	1	6/24/2007 9:20:37 PM	
EPA METHOD	8260B: VOLATILES					Analyst: SMP	
Benzene		ND	0.10	µg/L	1	6/25/2007 10:44:22 AM	
Toluene		ND	0.10	µg/L	1	6/25/2007 10:44:22 AM	
Ethylbenzene		ND	0.10	µg/L	1	6/25/2007 10:44:22 AM	
Xylenes, Total		ND	0.30	µg/L	1	6/25/2007 10:44:22 AM	
Surr: 1,2-Did	chloroethane-d4	99.0	50.9-168	%REC	1	6/25/2007 10:44:22 AM	
Surr: 4-Bron	nofluorobenzene	108	71.2-123	%REC	1	6/25/2007 10:44:22 AM	
Surr: Dibron	nofluoromethane	93.1	64.7-142	%REC	1	6/25/2007 10:44:22 AM	

81.9-122

%REC

102

#### Hall Environmental Analysis Laboratory Inc.

Date: 02-Jul-07

1

6/25/2007 10:44:22 AM

Qualifiers:

......

Surr: Toluene-d8

- ..... × Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- Not Detected at the Reporting Limit ND
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- B Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 4 of 13

**Date:** 02-Jul-07

•	· · · · · · · · · · · · · · · · · · ·						
CLIENT:	San Juan Refining			С	lient Sample ID:	TP	#5
Lab Order:	0706279				Collection Date:	6/1	8/2007 1:45:00 PM
Project:	River Terrace-2nd Qtr	-2007-Vapor			Date Received:	6/2	0/2007
Lab ID:	0706279-05				Matrix:	All	R I
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8	8015B: GASOLINE RAN	GE			•		Analyst: NSB
Gasoline Range	Organics (GRO)	9000	250		µg/L	50	6/24/2007 11:23:21 PM
Surr: BFB		118	84.5-129		%REC	50	6/24/2007 11:23:21 PM
EPA METHOD	8260B: VOLATILES						Analyst: SMP
Benzene		ND	5.0		µg/L	50	6/25/2007 11:20:06 AM
Toluene		ND	5.0		µg/L	50	6/25/2007 11:20:06 AM
Ethylbenzene		ND	5.0		µg/L	50	6/25/2007 11:20:06 AM
Xylenes, Total		1500	- 30		µg/L	100	6/25/2007 12:31:50 PM
Surr: 1,2-Dict	nloroethane-d4	100	50.9-168		%REC	50	6/25/2007 11:20:06 AM
Surr: 4-Brom	ofluorobenzene	99.2	71.2-123		%REC	50	6/25/2007 11:20:06 AM
Surr: Dibrom	ofluoromethane	99.4	64.7-142		%REC	50	6/25/2007 11:20:06 AM
Surr: Toluene	e-d8	100	81.9-122		%REC	50	6/25/2007 11:20:06 AM

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- ·S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLÌENT: Lab Order:	San Juan Refining 0706279			Cli	ent Sample ID: Collection Date:	TP- #2	2 2007 2:10:00 PM
Project: Lab ID:	River Terrace-2nd Qtr-2 0706279-06	2007-Vapor			Date Received: Matrix:	6/20/2 AIR	2007
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: GASOLINE RANG	E					Analyst: NSB
Gasoline Rang	e Organics (GRO)	10	5.0	!	ug/L	1	6/24/2007 9:51:12 PM
Surr: BFB		108	84.5-129	,	%REC	1	6/24/2007 9:51:12 PM
EPA METHOD	8260B: VOLATILES						Analyst: SMP
Benzene		ND	0.10		µg/L	1	6/25/2007 12:22:36 PM
Toluene		ND	0.10		µg/L	1	6/25/2007 12:22:36 PM
Ethylbenzene		ND	0.10		µg/L	1	6/25/2007 12:22:36 PM
Xylenes, Total		1.4	0.30		µg/L	1	6/25/2007 12:22:36 PM
Surr: 1,2-Dic	chloroethane-d4	99.7	50.9-168		%REC	1	6/25/2007 12:22:36 PM
Surr: 4-Brom	nofluorobenzene	104	71.2-123		%REC	1	6/25/2007 12:22:36 PM
Surr: Dibrom	ofluoromethane	104	64.7-142		%REC	1	6/25/2007 12:22:36 PM
Surr: Toluen	e-d8	94.7	81.9-122		%REC	1	6/25/2007 12:22:36 PM

Date: 02-Jul-07

Qualifiers: \* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 6 of 13

CLIENT:	San Juan Refini	ng
Lab Order:	0706279	
Project:	River Terrace-2	nd Qtr-2007-Vapor
Lab ID:	0706279-07	

Date: 02-Jul-07

Client Sample ID: TP- #13 Collection Date: 6/19/2007 10:30:00 AM Date Received: 6/20/2007 Matrix: AIR

\_\_\_\_

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	5.8	5.0	hð\r	1	6/25/2007 11:52:01 AM
Surr: BFB	113	84.5-129	%REC	1	6/25/2007 11:52:01 AM
EPA METHOD 8260B: VOLATILES					Analyst: SMP
Benzene	ND	0.10	µg/L	. 1	6/25/2007 11:49:12 AM
Toluene	ND	0.10	µg/L	1	6/25/2007 11:49:12 AM
Ethylbenzene	ND	0.10	µg/L	1	6/25/2007 11:49:12 AM
Xylenes, Total	0.60	0.30	µg/L	1	6/25/2007 11:49:12 AM
Surr: 1,2-Dichloroethane-d4	100	50.9-168	%REC	1	6/25/2007 11:49:12 AM
Surr: 4-Bromofluorobenzene	102	71.2-123	%REC	1	6/25/2007 11:49:12 AM
Surr: Dibromofluoromethane	105	64.7-142	%REC	1	6/25/2007 11:49:12 AM
Surr: Toluene-d8	95.3	81.9-122	%REC	1	6/25/2007 11:49:12 AM

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 7 of 13

Hall Environmental Analysis Laboratory, Inc.						02-Ju	-1-07
CLIENT: Lab Order:	San Juan Refining 0706279		2 <sup>1</sup>	. C	Client Sample ID: Collection Date:	TP- # 6/19/2	12 2007 11:00:00 AM
Project:	River Terrace-2nd Qtr	-2007-Vapor			Date Received:	6/20/2	2007
Lab ID:	0706279-08				Matrix:	AJR	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB
Gasoline Rang	e Organics (GRO)	6.0	5.0		µg/L	1	6/25/2007 12:22:44 PM
Surr: BFB		114	84.5-129		%REC	1	6/25/2007 12:22:44 PM
EPA METHOD	8260B: VOLATILES						Analyst: SMP
Benzene		ND	0.10		µg/L	1	6/25/2007 11:15:47 AM
Toluene		ND	0.10		µg/L	1	6/25/2007 11:15:47 AM
Ethylbenzene		ND	0.10		μg/L	1	6/25/2007 11:15:47 AM
Xylenes, Total		0.56	0.30		µg/L	1	6/25/2007 11:15:47 AM
Surr: 1,2-Dic	chloroethane-d4	98.4	50.9-168		%REC	1	6/25/2007 11:15:47 AM
Surr: 4-Brom	nofluorobenzene	99.1	71.2-123		%REC	1	6/25/2007 11:15:47 AM
Surr: Dibrom	ofiuoromethane	105	64.7-142		%REC	1	6/25/2007 11:15:47 AM
Surr: Toluen	e-d8	102	81.9-122		%REC	1	6/25/2007 11:15:47 AM

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits S
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 8 of 13

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CLIENT:	San Juan Refining			Client Sample ID:	TP-	#I]
Lab Order:	0706279			Collection Date:	6/19	/2007 11:25:00 AM
Project:	River Terrace-2nd Qtr-	-2007-Vapor		Date Received:	6/20	/2007
Lab ID:	0706279-09			Matrix:	AIR	
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: GASOLINE RANG	GE				Analyst: NSB
Gasoline Range	Organics (GRO)	7.2	5.0	μg/L	1	6/25/2007 12:53:19 PM
Surr: BFB		116	84.5-129	%REC	1	6/25/2007 12:53:19 PM
		·				
EPA METHOD	8260B: VOLATILES					Analyst: SMP
Benzene		ND	0.10	μg/L	1	6/25/2007 10:42:24 AM
Toluene		ND	0.10	µg/L	1	6/25/2007 10:42:24 AM
Ethylbenzene	,	ND	0.10	μg/L	1	6/25/2007 10:42:24 AM
Xylenes, Total		0.74	0.30	hð\r	1	6/25/2007 10:42:24 AM
Surr: 1,2-Dicl	nloroethane-d4	101	50.9-168	%REC	1	6/25/2007 10:42:24 AM
Surr: 4-Brom	ofluorobenzene	101	71.2-123	%REC	1	6/25/2007 10:42:24 AM
Surr: Dibrom	ofiuoromethane	106	64.7-142	%REC	1	6/25/2007 10:42:24 AM
Surr: Toluene	e-d8	98.1	81.9-122	%REC	1	6/25/2007 10:42:24 AM

Date: 02-Jul-07

Analyte detected in the associated Method Blank

- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

В

Page 9 of 13

9/16

Value exceeds Maximum Contaminant Level

Analyte detected below quantitation limits

Spike recovery outside accepted recovery limits

Value above quantitation range

Not Detected at the Reporting Limit

Qualifiers:

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J ND

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Hall Envir	conmental Analys	Date:	02-Jul-07					
CLIENT:	San Juan Refining			С	lient Sample ID:	TP- #	10	
Lab Order:	0706279				<b>Collection Date:</b>	6/19/2007 9:40:00 AM		
Project:	ect: River Terrace-2nd Qtr-2007-Vapor Date Received		Date Received:	6/20/2	2007			
Lab ID:	0706279-10				Matrix:	AIR		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB	
Gasoline Rang	e Organics (GRO)	11	. 5.0		µg/L	1	6/25/2007 1:23:52 PM	
Surr: BFB		124	84.5-129		%REC	1	6/25/2007 1:23:52 PM	
EPA METHOD	8260B: VOLATILES						Analyst: LMM	
Benzene		ND	0.10		µg/L	1	6/25/2007 12:17:48 PM	
Toluene		ND	0.10		µg/L	1	6/25/2007 12:17:48 PM	
Ethylbenzene		ND	0.10		µg/L	1	6/25/2007 12:17:48 PM	
Xylenes, Total		1.0	0.30		µg/L	1	6/25/2007 12:17:48 PM	
Surr: 1,2-Did	chloroethane-d4	94.6	50.9-168		%REC	1	6/25/2007 12:17:48 PM	
Surr: 4-Bron	nofluorobenzene	89.1	71.2-123		%REC	1	6/25/2007 12:17:48 PM	
Surr: Dibron	nofluoromethane	91.9	64.7-142		%REC	1	6/25/2007 12:17:48 PM	
Surr: Toluer	ne-d8	85.4	81.9-122		%REC	1	6/25/2007 12:17:48 PM	

÷ Value exceeds Maximum Contaminant Level

Qualifiers:

Е Value above quantitation range

Analyte detected below quantitation limits J

ND Not Detected at the Reporting Limit

- Spike recovery outside accepted recovery limits 10 / 16S
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 10 of 13

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							······································
CLIENT:	San Juan Refining			Client S	Sample ID:	TP-	#3
Lab Order:	0706279			Colle	ction Date:	6/19	/2007 9:55:00 AM
Project:	River Terrace-2nd (	Qtr-2007-Vapor		Date	Received:	6/20	/2007
Lab ID:	0706279-11				Matrix:	AIR	
Analyses	· · ·	Result	PQL	Qual Unit	5	DF	Date Analyzed
EPA METHOD	8015B: GASOLINE RA	NGE					Analyst: NSB
Gasoline Range	e Organics (GRO)	7.6	5.0	. µg/L		1	6/25/2007 2:25:24 PM
Surr: BFB		117	84.5-129	%RE	C	1	6/25/2007 2:25:24 PM
EPA METHOD	8260B: VOLATILES						Analyst: LMM
Benzene		ND	0.10	µg/L		.1	6/25/2007 12:56:35 PM
Toluene	·	ND	0.10	µg/L		1	6/25/2007 12:56:35 PM
Ethylbenzene	χ.	ND	0.10	µg/L		1	6/25/2007 12:56:35 PM
Xylenes, Total		1.0	0.30	µg/L		1	6/25/2007 12:56:35 PM
Surr: 1,2-Dic	hioroethane-d4	93.6	50.9-168	%RE	C	1	6/25/2007 12:56:35 PM
Surr: 4-Brom	ofluorobenzene	90.4	71.2-123	%RE	С	1	6/25/2007 12:56:35 PM
Surr: Dibrom	ofluoromethane	89.6	64.7-142	%RE	С	1	6/25/2007 12:56:35 PM
Surr: Toluen	e-d8	86.3	81.9-122	%RE	С	1	6/25/2007 12:56:35 PM

Qualifiers:	
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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- 11/16

B Analyte detected in the associated Method Blank

Date: 02-Jul-07

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

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Page 11 of 13

# QA/QC SUMMARY REPORT

Client: San Juan Refi	ining							
oject: River Terrace	e-2nd Qtr-2	2007-Vapor					Work	<b>Order</b> : 0706279
Analyte	Result	Units	PQL	%Rec	LowLimit Hig	ghLimit	%RPD RPI	DLimit Qual
Method: SW8015					and the second second second second second second second second second second second second second second second			
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R24087	Analysis Date:	6/24/2007 6:46:06 PM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R24087	Analysis Date:	6/25/2007 1:56:59 AM
Gasoline Range Organics (GRO)	0.4960	mg/L	0.050	94.8	80	115		
Method: SW8260B								
Sample ID: 5ml rb		MBLK			Batch ID:	R24110	Analysis Date:	6/25/2007 7:09:46 AM
Benzene	ND	ma/Ka	0.050					
Toluene	ND	ma/Ka	0.050					
Ethylbenzene	ND	ma/Ka	0.050					
Xylenes Total	ND	ma/Ka	0.10					
Sample ID: 100ng Ics		LCS			Batch ID:	R24110	Analysis Date:	6/25/2007 8:20:35 AM
Benzene	1.031	ma/Ka	0.050	103	78.2	123		
Toluene	0.9916	mg/Kg	0.050	99.2	72.6	128		
Method: SW8260B								
Sample ID: 5ml rb		MBLK			Batch ID:	R24110	Analysis Date:	6/25/2007 7:09:46 AM
Benzene	ND	ug/L -	1.0				,	
Toluene	ND	μg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
enes, Total	ND	µg/L	1.5					
mple ID: 100ng ics		LCS			Batch ID:	R24110	Analysis Date:	6/25/2007 8:20:35 AM
Benzene	20.62	µg/L	1.0	103	82.4	128		
Toluene	19.83	µg/L	1.0	99.2	77.2	115		
Method: SW8260B								
Sample ID: b1	· · · · ·	MBLK			Batch ID:	R24111	Analysis Date:	6/25/2007 8:59:20 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	μg/L	1.0					
Xylenes, Total	ND	µg/L	1.5					
Sample ID: 100ng lcs		LCS			Batch ID:	R24111	Analysis Date:	6/25/2007 10:09:00 AM
Benzene	19.81	µg/L	1.0	99.0	82.4	128		
Toluene	20.75	hð\r	1.0	104	77.2	115		
Method: SW8015								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R24112	Analysis Date:	6/25/2007 8:38:52 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R24112	Analysis Date.	6/25/2007 10:20:52 AM
Gasoline Range Organics (GRO)	0.5100	mg/L	0.050	97.6	80	115		

ualifiers:

- Value above quantitation range
- J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 14/16

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Page 1

River Terrace-2nd Qtr-2007-Vapor

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0706279

0706279-13

San Juan Refining

CLIENT:

Project:

Lab ID:

Lab Order:

**Date**: 02-Jul-07

Client Sample ID: TP- #9 Collection Date: 6/19/2007 1:10:00 PM Date Received: 6/20/2007 Matrix: AIR

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Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE R	ANGE	· · · · · · · · · · · · · · · · · · ·			Analyst: NSB
Gasoline Range Organics (GRO)	6.6	5.0	hð/L	1	6/28/2007 10:52:02 AM
Surr: BFB	95.8	84.5-129	%REC	1	6/28/2007 10:52:02 AM
EPA METHOD 8260B: VOLATILES					Analyst: LMM
Benzene	ND	0.10	hð/r	1	6/25/2007 2:14:12 PM
Toluene	ND	0.10	hð\r	1	6/25/2007 2:14:12 PM
Ethylbenzene	ND	0.10	µg/L	1	6/25/2007 2:14:12 PM
Xylenes, Total	0.93	0.30	μg/L	1	6/25/2007 2:14:12 PM
Surr: 1,2-Dichloroethane-d4	93.0	50.9-168	%REC	· 1	6/25/2007 2:14:12 PM
Surr: 4-Bromofluorobenzene	91.3	71.2-123	%REC	1	6/25/2007 2:14:12 PM
Surr: Dibromofluoromethane	88.7	64.7-142	%REC	1	6/25/2007 2:14:12 PM
Surr: Toluene-d8	. 85.4	81.9-122	%REC	1	6/25/2007 2:14:12 PM

Qualifiers:

Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 13 of 13

13/16

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	Sample Receipt Ch	ecklist		
Lient Name SJR		Date and Time F	Received:	6/20/2007
Work Order Number 0706279		Received by	TLS	
	U Date /	120/07		
· Matrix Carri	ier name UPS			
Shipping container/cooler in good condition?	Yes 🔽	No	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🔽	No []	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes	No 🗌	N/A	
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 🗌		
Water - VOA vials have zero headspace? No VOA	vials submitted <sup>*</sup>	Yes	No 🗌	
Water - Preservation labels on bottle and cap match?	Yes 🗍	No 🗌	N/A	
Water - pH acceptable upon receipt?	Yes 🗍	No	N/A	
Container/Temp Blank temperature?		4° C ± 2 Acceptal	ble	
COMMENTS:		If given sufficient	time to cool.	
	· · · · · · · · · · · · · · · · · · ·			
Client contacted Date cont	acted:	Perso	on contacted	
Contacted by: Regarding	9	,	· · · ·	
Comments:				
			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
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·			· • ·	
Corrective Action			· •	
<b>.</b>				

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ov record	elime	0	JWL				//	Sample I.D. No.	mw#49	TP.#1	Tp-#8	TP-#6	10,49	74-42					-	Byl (Signatufe) Adm Juntado By: [Signature)
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LO N	T NEC	tsu R	S (DOM)	\$ 5%		2756	75-6	Time	lejoan	II AM	1250m	1. Men	1元	202	h					Time: ASSAM
	Client:	Address	1771			Phone #(	Fax # 5	Date .	6/18/07											(VI807- Date: Date:

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HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345,3975 Fax 505.345.4107 www.hallenvironmental.com	AWAYSIS REDUEST	( or N)	(	odt9M) 013 8310 (PWA ( 8310 (PWA ( 70) 800 ( 70) 8008 8081 Pestic 8008 ( 70) 8088 8270 ( 8emi										
		(Yino anila) (Yino anila)	9 204'1) 9 418'1) 80128 (Case 8 + 1bH (Case 8 + 1bH (Case 8 - 1bH (Case	BTEX	7	Ž	7 7	7	<u>``</u>	7	2			Remarks:
QA / QC Package. Std L Level 4 D Other: Project Name:	Project #:	Project Manager:	Sample Tamper Parts	Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> HEAL No.	1-Teclar 7	&	6		``	12	51			Received By: (Signature) 0/20/67 Conuncy Reserved By: (Signature)
CHAIN-OF-CUSTODY RECORD Client: SAN Jun RUM	Address:#52 RI 4990	Bleen Fall NM B7413	Phone #: 555-632-4161 Fax #: 275-1-27-3911	Date Time Matrix Sample I.D. No.	Web 10304-NAPAR TP #13	217-412 / MM	11 # - 01 15211	q t b A   T - T - #/D	851 TD-#3	150m TP-#7	110pm 70-#9		<	Pate: Time: Relinchished By: (Spinkture) 1907 AD Relinquished By (Signature) Date: Time: Relinquished By (Signature)



#### COVER LETTER

Monday, July 02, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413 TEL: (505) 632-4161

FAX (505) 632-3911

RE: River Terrace 2nd Qtr 2007-Vapor

Dear Cindy Hurtado:

Order No.: 0706317

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 6/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE & Suite D & Albuquerque, NM 87109 505.345.3975 B Fax 505.345.4107 www.hallenvironmental.com

Date: 02-Jul-07

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CLIENT:	San Juan Refini	ng		Client Sam	ple ID: DV	V #1
Lab Order:	0706317			Collection	n Date: 6/2	0/2007 8:30:00 AM
Project:	River Terrace 2	nd Qır 2007-Vapor		Date Re	ceived: 6/2	1/2007
Lab ID:	0706317-01			Г	Matrix: Al	R
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8	015B: GASOLINE	ERANGE			. *	Analyst: NSB
Gasoline Range	Organics (GRO)	ND	5.0	µg/L	1	6/28/2007 11:22:26 AM
. Surr: BFB		_ 99.8	84.5-129	%REC	1	6/28/2007 11:22:26 AM
EPA METHOD	3260B: VOLATILE	S				Analyst: LMN

0.10

0.10

0.10

0.30

50.9-168

71.2-123

64.7-142

81.9-122

µg/L

µg/L

µg/L

µg/L

%REC

%REC

%REC

%REC

ND

ND

ND

0.32

92.8

89.2

90.5

88.1

6/25/2007 2:52:58 PM

Qualifiers:

Benzene

Toluene

Ethylbenzene

Xylenes, Total

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

Value exceeds Maximum Contaminant Level

Value above quantitation range Ε

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- Spike recovery outside accepted recovery limits S
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- Reporting Limit RL

Page 1 of 1

# QA/QC SUMMARY REPORT

Client:San Juan Refiroject:River Terrace	ning 2nd Qtr 2	2007-Vapor					Work	<b>Order</b> : 0706317
Analyte	Result	Units	PQL	%Rec	LowLimit Hig	ghLimit	%RPD RP	DLimit Qual
Method: SW8015								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R24112	Analysis Date:	6/25/2007 8:38:52 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
ample ID: 2.5UG GRO LCS		LCS			Batch ID:	R24112	Analysis Date:	6/25/2007 10:20:52 AM
Basoline Range Organics (GRO)	0.5100	mg/L	0.050	97.6	80 1	115		
lethod: SW8260B								
ample ID: 5mL rb		MBLK			Batch ID:	R24116	Analysis Date:	6/25/2007 10:21:11 AM
Benzene	ND	µg/L	1.0					
oluene	ND	hð/r	1.0					
thylbenzene	ND	hð\r	1.0					
ylenes, Total	ND	µg/L	3.0					
Sample ID: 100ng Ics		LCS			Batch ID:	R24116	Analysis Date:	6/25/2007 11:38:52 AM
Senzene	20.86	hð\r	1.0	104	82.4 1	128		
oluene	19.80	µg/L	1.0	99.0	77.2 1	115		
Method: SW8260B								
Sample ID: 5mL rb		MBLK			Batch ID:	R24116	Analysis Date:	6/25/2007 10:21:11 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	hð\r	1.0					
thylbenzene	ND	µg/L	1.0					
/lenes, Total	ND	µg/L	1.5					
Sample ID: 100ng Ics		LCS			Batch ID:	R24116	Analysis Date:	6/25/2007 11:38:52 AN
Benzene	20.86	µg/L	1.0	104	82.4	128		
oluene	19.80	hð\r .	1.0	99.0	77.2	115		
Nethod: SW8015								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R24178	Analysis Date:	6/28/2007 9:29:44 AN
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LĊS			Batch ID:	R24178	Analysis Date:	6/28/2007 5:30:21 PN
Gasoline Range Organics (GRO)	0.4960	mg/L	0.050	99.2	80	115		

- Qualifiers:
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - Spike recovery outside accepted recovery limits
    - 2/3

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Hall Environmental Analysis Laborate	ory, Inc.				
	Sample	Receipt Ch	necklist		
Client Name SJR			Date and Tim	e Received:	6/21/2007
Work Order Number 0706317			Received b	y TLS	
Checklist completed by Signature	6/2	71)07 Date			
Matrix	Carrier name	UPS			
Shipping container/cooler in good condition?		Yes 🔽	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?		Yes 🗹	No	Not Present	Not Shipped
Custody seals intact on sample bottles?		Yes 🗌	No 🗌	N/A	
Chain of custody present?		Yes 🗹	No 🗔		
Chain of custody signed when relinquished and receive	d?	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 🗌		
Water - VOA vials have zero headspace? No No	VOA vials subi	mitted 🔽	Yes	No	
Water - Preservation labels on bottle and cap match?		Yes 🗋	No 🗌	N/A	
Water - pH acceptable upon receipt?		Yes 🗌	No 🗆	N/A	
Container/Temp Blank temperature?		-	4° C ± 2 Acce	otable	
COMMENTS:			If given sufficie	ent time to cool.	
Client contacted Date	contacted:		Ρ	erson contacted	
Contacted by: Rega	rding				
Comments:				· · · · · · · · · · · · · · · · · · ·	
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	Air Bubbles or Headspace (Y or N)	
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HALL Bugu Bugu Iww.h	(HA9 10 AN9) 01 £8	
	EDC (Wethod 8021)	
	EDB (Method 504.1)	
	(Casoline Only)	arks:
		Bem
Dther: Project Name: Project #:	Project Manager: Currador Autric Currador Sample: Temperature: Number/Volume HgCl2   HN03 Currador HgCl2   HC HgCl2   H	Repeived By: (Signature) (2/2) 1/37 Druce By: (Signature) (2/2) 1/37 Received By: (Signature)
N. OF. CUSTONY RECORD N. T. M. Polining 57 R. 4990	100004 - 416 - 416 - 416 - 416 - 416 - 416 - 416 - 416 - 416 - 416 - 416 - 33 - 633 - 39 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Time: Relin/ut/shed By: (Signature)
Collient:	Phone #:	Contraction 1

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## COVER LETTER

Tuesday, August 28, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace 3rd Qtr-2007-VS

Order No.: 0708290

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 8/22/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

**CLIENT:** San Juan Refining Lab Order: 0708290 **Project:** River Terrace 3rd Qtr-2007-VS 0708290-01 Lab ID:

Date: 28-Aug-07

\_\_\_\_\_ Client Sample ID: TP-1B Collection Date: 8/21/2007 8:20:00 AM Date Received: 8/22/2007 Matrix: AIR

Analyses	Result	PQL Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE					Analyst: SMP
Gasoline Range Organics (GRO)	30	5.0	µg/L	1	8/23/2007 10:43:37 AM
Surr: BFB	124	84.5-129	%REC	1	8/23/2007 10:43:37 AM
EPA METHOD 8021B: VOLATILES					Analyst: SMP
Benzene	ND	0.10	µg/L	1	8/23/2007 10:43:37 AM
Toluene	ND	0.10	µg/L	1	8/23/2007 10:43:37 AM
Ethylbenzene	ND	0.10	µg/L	1	8/23/2007 10:43:37 AM
Xylenes, Total	1.3	0.30	µg/L	1	8/23/2007 10:43:37 AM
Surr: 4-Bromofluorobenzene	96.8	70.2-105	%REC	1	8/23/2007 10:43:37 AM

Value exceeds Maximum Contaminant Level В Analyte detected in the associated Method Blank Н Value above quantitation range

- Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit

Qualifiers:

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- Spike recovery outside accepted recovery limits S
- Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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Date: 28-Aug-07

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#### EPA METHOD 8021B: VOLATILES Analyst: SMP Benzene ND 0.10 8/23/2007 11:12:31 AM µg/L 1 Toluene ND 0.10 µg/L 1 8/23/2007 11:12:31 AM Ethylbenzene ND 0.10 µg/L 1 8/23/2007 11:12:31 AM 0.30 Xylenes, Total 1.0 8/23/2007 11:12:31 AM µg/L 1 Surr: 4-Bromofluorobenzene 90.7 70.2-105 %REC 1 8/23/2007 11:12:31 AM

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 2 of 7

CLIENT:San Juan RefiningLab Order:0708290Project:River Terrace 3rd Qtr-2007-VSLab ID:0708290-03

Date: 28-Aug-07

Client Sample ID: TP-11 Collection Date: 8/21/2007 8:55:00 AM Date Received: 8/22/2007 Matrix: AIR

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	NGE				Analyst: SMP
Gasoline Range Organics (GRO)	39	5.0	µg/L	1	8/23/2007 11:42:54 AM
Surr: BFB	126	84.5-129	%REC	1	8/23/2007 11:42:54 AM
EPA METHOD 8021B: VOLATILES	Υ.				Analyst: SMP
Benzene	ND	0.10	µg/L	1	8/23/2007 11:42:54 AM
Toluene	ND	0.10	µg/L	1	8/23/2007 11:42:54 AM
Ethylbenzene	ND	0.10	µg/L	1	8/23/2007 11:42:54 AM
Xylenes, Total	1.4	0.30	µg/L	1	8/23/2007 11:42:54 AM
Surr: 4-Bromofluorobenzene	94.5	70.2-105	%REC	1	8/23/2007 11:42:54 AM.

Qualifiers:

E Value above quantitation rangeJ Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 3 of 7

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Hall Environmental Analysis Laboratory, Inc. Date: 28-Aug-07							
CLIENT: Lab Order: Project:	San Juan Refining 0708290 River Terrace 3rd Otr 2007 VS			Client Sample I Collection Da	D: TP-10 te: 8/21/2	TP-10 8/21/2007 9:15:00 AM	
Lab ID:	0708290-04		Mater Mater	ix: AIR	AIR		
Analyses		Result	PQL Q	ial Units	DF	Date Analyzed	
EPA METHOD	8015B: GASOLINE RA	NGE				Analyst: SMP	
Gasoline Range Organics (GRO)		16	5.0	µg/L	1	8/23/2007 12:11:49 PM	
Surr: BFB		115	84.5-129	%REC	1	8/23/2007 12:11:49 PM	
EPA METHOD	8021B: VOLATILES	·				Analyst: SMP	
Benzene		ND	0.10	µg/L	1	8/23/2007 12:11:49 PM	
Toluene		ND	0.10	µg/L	1	8/23/2007 12:11:49 PM	
Ethylbenzene		ND	0.10	µg/L	1	8/23/2007 12:11:49 PM	
Xylenes, Total		1.0	0.30	µg/L	1	8/23/2007 12:11:49 PM	
Surr: 4-Bromofluorobenzene		92.2	70.2-105	%REC	1	8/23/2007 12:11:49 PM	

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

4/9

Page 4 of 7

CLIENT: San Juan Refining Lab Order: 0708290

Project:River Terrace 3rd Qtr-2007-VSLab ID:0708290-05

Date: 28-Aug-07

Client Sample ID: TP-3 Collection Date: 8/21/2007 9:35:00 AM Date Received: 8/22/2007 Matrix: AIR

Analyses	Result	PQL Q	1al Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	Analyst: SMP				
Gasoline Range Organics (GRO)	19	5.0	µg/L	. 1	8/23/2007 1:09:42 PM
Surr: BFB	114	84.5-129	%REC	1	8/23/2007 1:09:42 PM
EPA METHOD 8021B: VOLATILES					Analyst: SMP
Benzene	ND	0.10	µg/L	1	8/23/2007 1:09:42 PM
Toluene	ND	0.10	µg/L	1	8/23/2007 1:09:42 PM
Ethylbenzene	ND	0.10	µg/L	1	8/23/2007 1:09:42 PM
Xylenes, Total	1.3	0.30	µg/L	1	8/23/2007 1:09:42 PM
Surr: 4-Bromofluorobenzene	90.9	70.2-105	%REC	1	8/23/2007 1:09:42 PM

#### Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.Date: 28-Aug-07							
CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0708290 River Terrace 3rd Qt 0708290-06	r-2007-VS	Client Sample ID Collection Date Date Received Matrix		DW #1 8/21/2007 10:15:00 AM 8/22/2007 AIR		
Analyses		Result	PQL Qı	ial Units	DF	Date Analyzed	
EPA METHOD	8015B: GASOLINE RAI	NGE				Analyst: SMP	
Gasoline Range Organics (GRO)		9.0	5.0	µg/L	1	8/23/2007 1:38:38 PM	
Surr: BFB		105	84.5-129	%REC	1	8/23/2007 1:38:38 PM	
EPA METHOD	8021B: VOLATILES					Analyst: SMP	
Benzene		ND	0.10	µg/L	1	8/23/2007 1:38:38 PM	
Toluene		ND	. 0.10	hð\r	1	8/23/2007 1:38:38 PM	
Ethylbenzene		ND	0.10	µg/L	1	8/23/2007 1:38:38 PM	
Xylenes, Total		0.48	0.30	µg/L	1	8/23/2007 1:38:38 PM	
Surr: 4-Bromofluorobenzene		86.8	70.2-105	%REC	1	8/23/2007 1:38:38 PM	

#### Qualitiers:

- \* Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Not Detected at the Reporting Limit ND
- Spike recovery outside accepted recovery limits S
- -----B Analyte detected in the associated Method Blank

- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit
Suir: 4-Brömölluðröbenzéne

Date: 28-Aug-07

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8/23/2007 2:07;27 PM

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0708290 River Terrace 3rd Qtr 0708290-07	-2007-VS		C	TP-9 8/21/2 8/22/2 AIR	007 11:00:00 AM 007		
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD	8015B: GASOLINE RAN	IGE			<u>.</u>			Analyst: SMP
Gasoline Rang	e Organics (GRO)	65	5.0		µg/L		1	8/23/2007 2:07:27 PM
Surr: BFB		131	84.5-129	S	%REC		1	8/23/2007 2:07:27 PM
EPA METHOD	8021B: VOLATILES							Analyst: SMP
Benzene		ND	0.10		μg/L		1	8/23/2007 2:07:27 PM
Toluene		ND	0.10		µg/L		1	8/23/2007 2:07:27 PM
Ethylbenzene		ND	0.10		µa/L		4	 
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Qualifiers: \* Value exceeds Maximum Contaminant Level В Analyte detected in the associated Method Blank Е Value above quantitation range Н Holding times for preparation or analysis exceeded MCL Maximum Contaminant Level J Analyte detected below quantitation limits Not Detected at the Reporting Limit Reporting Limit ND RL S Spike recovery outside accepted recovery limits

Page 7 of 7

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San Juan Refining

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# QA/QC SUMMARY REPORT

<b>Eject:</b> River Terrace	e 3rd Qtr-2	007-VS					We	ork Or	der: 0708290
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD I	RPDLir	nit Qual
Method: SW8015									
Sample ID: 5ML RB		MBLK			Batch	D: R24885	Analysis Date	e: 8/	23/2007 9:10:07 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Sample ID: 2.5UG GRO LCS		LCS			Batch I	D: R24885	Analysis Date	e: 8/	23/2007 3:37:51 PM
Gasoline Range Organics (GRO)	0.4696	mg/L	0.050	90.6	80	115			
Method: SW8021									
Sample ID: 5ML RB		MBLK			Batch	D: R24885	Analysis Date	e: 8/	23/2007 9:10:07 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		LCS			Batch	D: <b>R24885</b>	Analysis Date	e: 8,	/23/2007 2:37:33 PM
Benzene	17.77	µg/L	1.0	88.9	85.9	113			
Toluene	17.37	μg/Ļ	1.0	86.9	86.4	113			
Ethylbenzene	18.05	µg/L	1.0	90.2	83.5	118			
Xylenes, Total	54.72	µg/L	2.0	90.9	83.4	122			
Sample ID: 100NG BTEX LCSD		LCSD			Batch	ID: R24885	Analysis Date	e: 8	/23/2007 3:07:41 PM
Benzene	18.32	µg/L	1.0	91.6	85.9	113	3.04	27	
Toluene	18.12	µg/L	1.0	90.6	86.4	113	4.23	19	
lbenzene	18.75	µg/L	1.0	93.7	83.5	118	3.81	10	
Anenes, Total	56.41	µg/L	2.0	93.7	83.4	122	3.04	13	

ualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 8/9

Sar	nple Receipt Ch	ecklist		
Client Name SJR		Date and Time	Received:	8/22/2007
Work Order Number 0708290		Received by	TLS	
Checklist completed by Signature	8 22 07 Date			
Matrix Carrier na	ame <u>UPS</u>			
Shipping container/cooler in good condition?	Yes 🗹	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🔽	No 🗔	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes 🗌	No 🗌	N/A	
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 🗔		
Water - VOA vials have zero headspace? No VOA vials	s submitted	Yes	No 🗌	
Water - Preservation labels on bottle and cap match?	Yes 🗌	No 🗔	N/Á 🔽	
Water - pH acceptable upon receipt?	Yes	No 🗔	N/A 🔽	
Container/Temp Blank temperature?		4° C ± 2 Accepta	able	
COMMENTS:		If given sufficien	t time to cool.	
			· ,	
		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
Client contacted Date contacted	d:	Pers	son contacted	
Contacted by: Regarding				
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Comments:			<b></b>	
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Corrective Action				
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COVER LETTER

Tuesday, September 18, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX: (505) 632-3911

RE: River Terrace  $-3^{rd}$  Qtr 2007

Order No.: 0708272-A

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory received 8 samples on 8/21/07 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab #9425 AZ License #AZ0682 ORELAP Lab #NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

#### Date: 18-Sep-07

CLIENT: San Juan Refining				Client Sample	21D: TP-#2			
Lab Order:	0708272			Collection I	Date: 8/20/2	8/20/2007 10:30:00 AM		
Project:	River Terrace - 3rd Qt	r-2007		Date Recei	ved: 8/21/2	.007		
Lab ID:	0708272-10			Ma	trix: AIR			
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: SMP		
Gasoline Rang	e Organics (GRO)	ND	5.0	µg/L	1	B/21/2007 2:37:43 PM		
Surr: BFB		101	84.5-129	%REC	1	8/21/2007 2:37:43 PM		
EPA METHOD	8260B: VOLATILES SHO	RT LIST				Analyst: NSB		
Benzene		ND	0,10	havr	1	8/22/2007 1:42:26 PM		
Toluene		ND	0.10	μg/L	1	8/22/2007 1:42:26 PM		
Ethylbenzene		ND	0.10	hð\r	1	8/22/2007 1:42:26 PM		
Xylenes, Total		ND	0.30	μg/L	1	8/22/2007 1:42:26 PM		
Surr: 4-Bron	nolluorobenzene	97.8	66.5-128	%REC	1	8/22/2007 1:42:26 PM		

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 1/11
- B Analyte detected in the associated Method Blank
- 11 Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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Date: 18-Sep-07

CLIENT:	San Juan Refining			Cl	ient Sample ID:	TP-#1	
Lab Order:	0708272			(	Collection Date:	8/20/2	2007 10:55:00 AM
Project:	River Terrace - 3rd	Qtr-2007			Date Received:	8/21/2	2007
Lab ID:	0708272-11				Matrix:	AIR	
Analyses		Result	PQL	Quał	Units	DF	Date Analyzed
EPA METHOD	8015B: GASOLINE R	ANGE					Analyst: SMP
Gasoline Rang	e Organics (GRO)	1300	250		µg/L	50	8/21/2007 4:41:34 PM
Surr: BFB		120	84.5-129		%REC	50	8/21/2007 4:41:34 PM
EPA METHOD	8260B: VOLATILES S	HORT LIST					Analyst: NSB
Benzene		23	2.0		µg/L	20	8/22/2007 2:15:56 PM
Toluene		ND	2.0		µg/L	20	8/22/2007 2:15:56 PM
Ethylbenzene		75	2.0		µg/L	20	8/22/2007 2:15:56 PM
Xylenes, Totat		390	6.0		µg/L	20	8/22/2007 2:15:56 PM
Surr: 4-Brom	nolluorobenzene	100	66.5-128		%REC	20	8/22/2007 2:15:56 PM

Qualifiers:

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Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits 2/11

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	San Juan Refining			Client Sample 1	ID: TP-#8	<b>;</b>
Lab Order:	0708272			Collection Da	ite: 8/20/2	2007 12:45:00 PM
Project:	River Terrace - 3rd (	Qir-2007		Date Receiv	ed: 8/21/2	2007
Lab ID:	0708272-12			Matr	ix: AlR	
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: GASOLINE RA	NGE	<u></u>			Analyst: SMP
Gasoline Rang	e Organics (GRO)	6.2	5.0	µg/L	1	8/23/2007 1:47:36 PM
Surr: BFB		89.9	84.5-129	%REC	1	8/23/2007 1:47:36 PM
EPA METHOD	8260B: VOLATILES SH	IORT LIST				Analyst: NSB
Benzene		ND	0.10	µg/L	1	8/23/2007 1:34:07 PM
Toluene		ND	0.10	µg/L	1	8/23/2007 1:34:07 PM

0.10

0.30

66.5-128

µg/L

µg/L

%REC

0,10

0.78

95.4

Hall Environmental Analysis Laboratory, Inc.

Qualifiers:

.4

Ethylbenzene

Xylenes, Total

Surr: 4-Bromofluorobenzene

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 3 / 11
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

Date: 18-Sep-07

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8/23/2007 1:34:07 PM

8/23/2007 1:34:07 PM

8/23/2007 1:34:07 PM

- MCL Maximum Contaminant Level
- RL Reporting Limit

				· · · · ·		
CLIENT:	San Juan Refining			Client Sample	D: TP-#8	-FD
Lab Order:	0708272			<b>Collection Da</b>	te: 8/20/2	2007 12:48:00 PM
Project:	River Terrace - 3rd	Qtr-2007		Date Receiv	ed: 8/21/2	2007
Lab ID:	0708272-13			Matr	ix: AIR	
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: GASOLINE RA	NGE				Analyst: SMP
Gasoline Rang	e Organics (GRO)	ND	5.0	μg/L	1	8/24/2007 3:53:13 PM
Surr: BFB		88.2	84.5-129	%REC	1	8/24/2007 3:53:13 PM
EPA METHOD	8260B: VOLATILES S	HORT LIST				Analyst: NSB
Benzene		ND	0.10	μg/L	1	8/22/2007 3:56:19 PM
Toluene		ND	0.10	μg/L	1	8/22/2007 3:56:19 PM
Ethylbenzene		ND	0.10	hð\r	1	8/22/2007 3:56:19 PM
Xylenes, Totał		0.89	0.30	μg/L	1	8/22/2007 3:56:19 PM
Surr: 4-Brom	ofluorobenzene	96.2	66.5-128	%REC	1	8/22/2007 3:56-19 PM

Qualifiers:

- Value exceeds Maximum Comaminant Level
- E Value above quantitation range
- 3 Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- .S Spike recovery outside accepted recovery limits 4/
- B Analyte detected in the associated Method Blank

Date: 18-Sep-07

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit
- 4/11

Date: 18-Sep-07

CLIENT: San Juan Refining				Client S	ample ID:	MW#49		
Lab Order:	0708272			Collec	tion Date:	8/20/2	2007.1:25:00 PM	
Project:	River Terrace - 3rd Qu	-2007		Date	Received:	8/21/2	2007	
Lab ID:	0708272-14				Matrix:	AIR		
Analyses		Result	PQL	Qual Units		DF	Date Analyzed	
EPA METHOD 80	15B: GASOLINE RANG	ЭЕ				<i>.</i>	Analyst: SMP	
Gasoline Range (	Drganics (GRO)	ND	5.0	µg/L		1	8/27/2007 3:33:07 PM	
Surr: BFB		92.5	84.5-129	%REC		1	8/27/2007 3:33:07 PM	
EPA METHOD 82	260B: VOLATILES SHO	RT LIST					Analyst: NSB	
Benzene		ND	0.10	µg/L		1	8/23/2007 2:11:08 PM	
Toluene		ND	0.10	րց/Ր		1	8/23/2007 2:11:08 PM	
Ethylberizene		ND	0.10	ha\r		1	8/23/2007 2:11:08 PM	
Xylenes, Total		0.39	0.30	µg/L		1	8/23/2007 2:11:08 PM	
Surr: 4-Bromol	luorobenzene	97.7	66.5-128	%REC		1	8/23/2007 2:11:08 PM	

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S – Spike recovery outside accepted recovery limits -5 / 11

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 18-Sep-07

CLIENT: San Juan Refining				Client Sa	mple ID:	TP-6			
Lab Order:	0708272			Collecti	on Date:	8/20/2007 1:55:00 PM			
Project:	River Terrace - 3rd	Qir-2007		Date F	Date Received:		007		
Lab ID:	0708272-15				Matrix:	AIR			
Analyses		Result	PQL	Qual Units		DF	Date Analyzed		
EPA METHOD	8015B: GASOLINE RA	NGE					Analyst: SMP		
Gasoline Rang	e Organics (GRO)	ND	5.0	μg/L		1	8/22/2007 12:18:22 PM		
Surr: BFB		90.8	84.5-129	%REC		1	8/22/2007 12:18:22 PM		
EPA METHOD	8260B: VOLATILES SH	HORT LIST					Analyst: NSB		
Benzene		ND	0.10	րց/լ		1	8/23/2007 2:44:37 PM		
Toluene		ND	0.10	µg/L		1	8/23/2007 2:44:37 PM		
Ethylbenzene	·	ND	0.10	μg/L		1	B/23/2007 2:44:37 PM		
Xylenes, Total		0.44	0.30	μg/L		1	8/23/2007 2:44:37 PM		
Surr: 4-Brom	nofluorobenzene	95.9	66.5-12B	%REC		1	8/23/2007 2:44:37 PM		

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Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits -6/11

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Date: 18-Sep-07

CLIENT: San Juan Refining 0708272 Lab Order: Project: River Terrace - 3rd Qtr-2007 Lab ID: 0708272-16

Client Sample ID: TP-7 Collection Date: 8/20/2007 2:15:00 PM Date Received: 8/21/2007 Matrix: AIR

Anałyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	ANGE				Analyst: SMP
Gasoline Range Organics (GRO)	ND	5.0	μg/L	1	8/21/2007 3:39:32 PM
Surr: BFB	85.2	84.5-129	%REC	1	8/21/2007 3:39:32 PM
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analyst: NSB
Benzene	ND	0.10	µg/L	1	8/23/2007 3:18:06 PM
Toluene	ND	0.10	µg/L	1	8/23/2007 3:18:06 PM
Elhylbenzene	ND	0.10	րց/Ն	1	8/23/2007 3:18:06 PM
Xylenes, Tolal	ND	0.30	µg/L	1	8/23/2007 3:18:06 PM
Surr: 4-Bromolluprobenzene	98.5	66.5-128	%REC	1	8/23/2007 3:18:06 PM

Qualifiers:

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- Value exceeds Maximum Contaminant Level Value above quantitation range
- E
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits -7/115
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 18-Sep-07

CLIENT: San Juan Refining Client Sample ID: TP-5 Lab Order: 0708272 Collection Date: 8/20/2007 2:30:00 PM Project: River Terrace - 3rd Qir-2007 Date Received: 8/21/2007 Matrix: AIR Lab ID: 0708272-17 Analyses Result PQL Qual Units DF **Date Analyzed** EPA METHOD 8015B; GASOLINE RANGE Analyst: SMP Gasoline Range Organics (GRO) 13000 250 µq/L 50 8/21/2007 5:12:28 PM Surr: BFB 270 84,5-129 S %REC 50 8/21/2007 5:12:28 PM EPA METHOD 8260B: VOLATILES SHORT LIST Analyst: NSB Benzene ND 1.0 µg/L 10 8/23/2007 4:25:07 PM Toluene ND 1.0 µg/L 10 8/23/2007 4:25:07 PM Ethylbenzene ND 1.0 µg/L 10 8/23/2007 4:25:07 PM Xylenes, Total 910 15 µg/L 50 8/23/2007 12:55:29 PM Surr: 4-Bromofluorobenzene 113 66.5-128 %REC 10 8/23/2007 4:25:07 PM

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits 8 / 11
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

# QA/QC SUMMARY REPORT

Client:

San Juan Refining River Terrace - 3rd Qtr-2007

Project: River Terrace	2 - 3rd Qtr-	2007				Work	Order: ()708272
Analyle	Result	Units	POL	%Rec	LowLimit HighLimit	%RPD RP	DLimit Qual
Method: SW8015 Sample ID: 5ML RB		MBLK			Batch ID: R24885	Analysis Date:	8/23/2007 9 1007 AM
Gasoline Range Organics (GRO) Sample ID: B	ND	mg/L MBLK	0.050		Batch ID: R24905	Analysis Date:	8/24/2007 6:25:38 PM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	ND	mg/L MBLK	0.050		Batch ID: R24919	Analysis Date:	8/27/2007 10:01:29 AM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	ND	mg/L MBLK	0.050		Batch ID: R24937	Analysis Date	8/27/2007 2:00.37 PM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	ND	mg/L MBLK	0.050		Batch ID: R24916	Analysis Date:	8/24/2007 2:21:10 PM
Gasoline Range Organics (GRO) Sample ID; 5ML RB	ND	mg/L MBLK	0.050		Batch ID: R24869	Analysis Dale:	8/22/2007 10:46:52 AM
Gasoline Range Organics (GRO) Sample ID: 5mL rb 1	ND	mg/L MBLK	0.050		Batch ID: R24847	Analysis Date:	8/21/2007 12:53:28 PM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	NĎ	mg/L <i>MBLK</i>	0.050		Batch ID: R24886	Analysis Date:	8/23/2007 12:16:03 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	ND	mg/L LCS	0.050		Batch ID: R24885	Analysis Date:	, 8/23/2007 3:37:51 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS B	0.4696	mg/L LCS	0.050	90.6	80 115 Batch ID: <b>R24905</b>	Analysis Date <sup>.</sup>	8/25/2007 11:32:52 PM
Gasoline Range Organics (GRO) Sample ID: 2.50G GRO LCS	0.4954	mg/L LCS	0.050	94.7	80 115 Batch ID. R24919	Analysis Date:	8/27/2007 6:39:05 PM
Gasoline Range Organics (GRO) Sample ID: 2,50G GRO LC5	0.5258	mg/L LCS	0.050	100	80 115 Baich ID: R24847	Analysis Date	8/21/2007 1:54:46 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0 4560	mg/L LCS	0.050	86 B	80 115 Balch ID: R24869	Analysis Date	8/22/2007 11:47:53 AM
Gasoline Range Organics (GRO) Sample ID: 2.25UG GRO LCS	0 4700	mg/L LCS	0.050	89.6	80 115 Batch ID: R24886	Analysis Date	8/23/2007 1:17:08 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0.4580	mg/L LCS	0.050	91.6	80 115 Batch ID: R24916	Analysis Date	8/24/2007 3:22:28 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0.4700	mg/L LCS	0 050	89.6	80 115 Batch ID: R24937	Analysis Date	8/27/2007 3:01:49 PM
Gasoline Range Organics (GRO)	0 4600	mg/L	0.050	88.0	80 115		

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation lumits

R \_\_\_\_ RPD outside accepted recovery limits

11 Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit.

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9 / 1 1 overy outside accepted recovery limits

Work Order:

0108272

# QA/QC SUMMARY REPORT

Client: Project: San Juan Refining River Terrace - 3rd Qtr-2007

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Analyte	Resull	Units	POL	%Rec	LowLimit	HighLimit	%RPD RF	PDLimit Qual
Method: SW8021								
Sample ID: 5ML RB		MBLK			Batch li	D R24885	Analysis Date	8/23/2007 910:07 AM
Methyl tert-bulyl ether (MTBE)	ND	μg/L	2 5					
Benzene	ND	μg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	μg/L	1.0					
Xylenes, Total	ND	րց/Ր	2.0					
Sample ID: 5ML RB		MBLK			Batch I	D: R24905	Analysis Date:	8/24/2007 1001:20 AM
Methyl terl-bulyl ether (MTBE)	ND	µg/L	2.5					
Benzene	ND	hð\r	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: 5ML RB		MBLK			Batch 1	D; R24919	Analysis Date.	8/27/2007 1001:29 AM
Methyl len-butyl elher (MTBE)	ND	µg/L	2.5					
Benzene	ND	μg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xvlenes, Total	ND	µg/L	2.0					
Sample ID: 100NG BTEX LCS		LCS			Balch I	D: R24885	Analysis Date:	8/23/2007 237:33 PM
Methyl tert-bulyt ether (MTBE)	19.11	ua/L	2.5	95.6	51.2	138		
Benzene	17.77	ug/L	1.0	88.9	85.9	113		
Toluene	17.37	nd/L	1.0	86.9	86.4	113		
Ethvibenzene	18.05	μg/L	1.0	90.2	83.5	118		
Xylenes, Total	54.72	µg/L	2.0	90.9	83.4	122		
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R24905	Analysis Date	8/24/2007 11:31:32 AM
Methyl lert-buyl ether (MTBE)	18.11	µg/L	2.5	90.6	51.2	136		
Benzene	17.89	µg/L	1.0	89.4	85.9	113		
Toluene	17.92	μg/L	1.0	89.6	86.4	113		
Ethylbenzene	18.15	µg/L	1.0	90.3	83.5	118		
Xylenes, Tolal	54.67	µg/L	2.0	90.5	83.4	122		
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R24919	Analysis Date	8/27/2007 6:06:58 PM
MethyLtert-bulyLether (MTBE)	19.08	µg/L	2.5	95.4	51.2	138		
Benzene	19.04	µg/L	1.0	95.2	85.9	113		
Toluene	20.03	hây <sup>-</sup>	. 1.0	100	86.4	113		
Ethylbenzene	20.43	µg/L	1.0	102	83.5	118		
Xylenes, Total	62.35	hð\r	2.0	104	83.4	122		
Sample ID: 100NG BTEX LCSD		LCSD			Batch	ID: R24885	Analysis Date	8/23/2007 307:41 PM
Methyl tert-bulyl ether (MTBE)	19.24	µg/L	2.5	96.2	51,2	138	0 688	28
Benzene	18.32	µg/L	1.0	91.6	85.9	113	3.04	27
Toluene	18.12	μg/L	1.0	90.6	86.4	113	4 23	19
Elhylbenzene	18.75	րց/լ	1.0	93.7	83.5	118	3.81	10
Xylenes, Tolal	56.41	րը/Ր	2.0	93.7	83.4	122	3 04	13

#### Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits

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R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

80 Not Detected at the Reporting Limit

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10/11<sup>wery outside accepted recovery limits</sup>

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# QA/QC SUMMARY REPORT

Client: Son Juan	Refining							
Project: River Ter	rrace - 3rd Qur-	2007					Work	Order: 0708272
Analyle	Result	Units	POL	%Rec	LowLimit I	-lighL imit	%RPD RP	DLimit Qual
Method: SW8260B						· · · · · · · · · · · · · · · · · · ·		
Sample ID: 5ml rb		MBLK			Batch ID	): R24875	Analysis Dale:	8/22/2007 1033:28 AM
Benzene	ND	uo/L	1.0					
Toluene	ND	halt	1.0					
Ethylbenzene	ND	μg/L	1.0					
Xylenes, Total	ND	μg/L	30					
Sample ID: 100ng lcs		LCS			Batch ID	): R24875	Analysis Date:	8/22/2007 11:40:20 AM
Benzene	19.57	ua/L	1.0	97.9	82.4	128 <sup>.</sup>		
Toluene	19.11	19/L	1.0	95.6	77.2	115		
Method: SW8260B								
Sample ID: 5ml rb-11		MBLA			Baich IL	J: R24875	Analysis Date:	8/22/2007 10:30:08 FM
Benzene	ND	µg/L	1.0		•			
Toluene	ND	hð\r	1.0					
Ethylbenzene	ND	µg∕L	1.0					
Tetrachforoethene (PCE)	ND	hð\r	1.0					
Xylenes, Total	ND	μg/L	1.5					
Sample ID: 100ng ics-II		LCS			Batch I	D: R24875	Analysis Date:	8/23/2007 12:52:04 AM
Benzene	<b>19</b> .01	µg/L	1.0	95.0	82.4	128		
Toluene	18.72	µg/L	1.0	93.6	77.2	115	· • • • • • • •	· · · · · · · · · · · · · · · · · · ·
Method: SW8260B								
Sample ID: 5mL rb		MBLK			Batch II	D: R24888	Analysis Dale:	8/23/2007 10:57:01 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	pg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	3.0					
Sample ID: 100ng Ics		LCS			Batch I	D. R24888	Analysis Date.	8/23/2007 12:15:05 PM
Benzene	19.33	havr	1.0	96.6	82.4	128		
Toluene	18.78	իը/լ	1.0	93.9	77.2	115		
Method: SWB260B								
Sample ID 5mL rb		MBLK			Batch I	D R24888	Analysis Date	8/23/2007 10:57:01 AM
Benzene	NO	hð\r	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Tetrachimoethene (PCE)	ND	hð\r	1.0					
Xylenes, Total	ND	ինկ	1.5					
Sample ID: 100ng lcs		LCS			Batch	ID: R24888	Analysis Date	8/23/2007 12:15:05 PM
Benzene	19.33	μց/Լ	1.0	96.6	82.4	128		
Toluene	18.78	µg/L	1.0	93.9	77.2	115		

Qualifiers:

F Value above quantitation range

J Analyte detected below quantitation limits

R RPD muside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit.

S 11/11 very outside accepted recovery lumits

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L ENVIRONMENTA NLYSIS LABORATOF Hawkins NE, Suite D	Jerque, New Mexico 87109 15.345.3975 Fax 505.34 1ailenvironmental.com	VISIS REQUEST		(; (*)	2808) s )S ' <sup>r</sup> Od	י) הכפוי הכפוי אס <sup>י</sup>	stəts DN , IC səbioi: (AO (AO ADV-in	M B 4 12999 ( 17897 ( 1982) ( 1982) (	ARDA NoinA 808 1828 1958 2758		•									malerse for a	
	Albuq Tel. 50 www.h	ANAU		s Ouly	anilose d	ин) 51) 811 1611 1641	+ 381 108 bc 14 bor 08 bor 08 bor 49 or PA	+ M Meth (Meth (Meth (Meth (Meth	8310 EDC EDC LbH I LbH I LbH I	X X X X X X X X X X X X X X X X X X X		x X		x   X	X	X				imarks: per criline	Γ.
Std C Level 4 X	Project Name:	Project #:		Project Manager:	(mill Houte der	Bandher H. Pado/ Bab Kalow	Sample/femperature/	Preservative	Number/Volume H9Cl <sub>2</sub> HNO <sub>3</sub> OTCS272	1-Teo/ar -10 ?		< 2 - 2								 Received By (Bignature) Received By Bignature)	Received By: (Signatural) 3/21/07
-custopy record	uen Zermin	1/ 1/00/	Ca 47110	nela, Nivi	771)	1033-416/	632-3911		Matrix Sample I.U. No.	VAPOR TP-#2	1 TP-# 1	TP-#8	TP#8-FD	6740M	/ TP-6	1 TP-7	179-5			 Relinquished By: (Signature)	Relinquished By: (Gignature)
CHAIN-OF-	Client: Sau IL	Address: ++	A00 /1	1 monto	ġ.	Phone #: ShS	Fax #: 305 ~	1	Late lime	8/20/27 (030A	105	13455	GHE 1	1950	1550	1/15m	ADAM	•		Date: Time: 8/20/27	Date: Time:



### COVER LETTER

Wednesday, November 14, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace 4th Qtr-2007-VS

Order No.: 0710547

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 8 sample(s) on 10/30/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Date: 14-Nov-07

A.

CLIENT: Project: Lab Order:	San Juan Refining River Terrace 4th Qt 0710547	r-2007-VS	Work Order	Sample Summary
Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0710547-01A	TP-2	R25851	EPA Method 8015B: Gasoline Range	10/29/2007 9:45:00 AM
0710547-01A	TP-2	R25851	EPA Method 8021B: Volatiles	10/29/2007 9:45:00 AM
0710547-02A	TP-1	R25851	EPA Method 8021B: Volatiles	10/29/2007 10:10:00 AM
0710547-02A	TP-1	R25851	EPA Method 8015B: Gasoline Range	10/29/2007 10:10:00 AM
0710547-03A	TP-6	R25851	EPA Method 8021B: Volatiles	10/29/2007 10:35:00 AM
0710547-03A	TP-6	R25851	EPA Method 8015B: Gasoline Range	10/29/2007 10:35:00 AM
0710547-04A	TP-8	R25851	EPA Method 8015B: Gasoline Range	10/29/2007 11:00:00 AM
0710547-04A	TP-8	R25851	EPA Method 8021B: Volatiles	10/29/2007 11:00:00 AM
0710547-05A	T <b>P-8</b> FD	R25851	EPA Method 8015B: Gasoline Range	10/29/2007 11:04:00 AM
0710547-05A	TP-8 FD	R25851	EPA Method 8021B: Volatiles	10/29/2007 11:04:00 AM
0710547-06A	TP-7	R25851	EPA Method 8021B: Volatiles	10/29/2007 11:20:00 AM
0710547-06A	TP-7	R25851	EPA Method 8015B: Gasoline Range	10/29/2007 11:20:00 AM
0710547-07A	TP-5	R25851	EPA Method 8021B: Volatiles	10/29/2007 1:45:00 PM
0710547-07A	TP-5	R25851	EPA Method 8015B: Gasoline Range	10/29/2007 1:45:00 PM
0710547-08A	TP-9	R25851	EPA Method 8015B: Gasoline Range	10/29/2007 2:10:00 PM
0710547-08A	TP-9	R25851	EPA Method 8021B: Volatiles	10/29/2007 2:10:00 PM

CLIENT:	San Juan Refining			Client Sampl	e ID:	TP-2			
Lab Order:	0710547			<b>Collection Date:</b>			10/29/2007 9:45:00 AM		
Project:	River Terrace 4th (	Qtr-2007-VS		Date Rece	ived:	10/30/	/2007		
Lab ID:	0710547-01			Ma	atrix:	AIR			
Analyses		Result	PQL	Qual Units		DF	Date Analyzed		
EPA METHOD	8015B: GASOLINE R	ANGE		<u>.</u>			Analyst: NSB		
Gasoline Rang	e Organics (GRO)	ND	5.0	µg/L		1	10/31/2007 11:38:10 AM		
Surr: BFB		102	84.5-129	%REC		1	10/31/2007 11:38:10 AM		

0.10

0.10

0.10

0.30

70.2-105

µg/L

µg/L

µg/L

µg/L

%REC

ND

ND

ND

ND

92.3

#### Hall Environmental Analysis Laboratory, Inc.

EPA METHOD 8021B: VOLATILES

Surr: 4-Bromofluorobenzene

Benzene

Toluene

Ethylbenzene

Xylenes, Total

Date: 14-Nov-07

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1

1

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Analyst: NSB

10/31/2007 11:38:10 AM

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:San Juan RefiningLab Order:0710547Project:River Terrace 4th Qtr-2007-VSLab ID:0710547-02

Date: 14-Nov-07

Client Sample ID: TP-1 Collection Date: 10/29/2007 10:10:00 AM Date Received: 10/30/2007 Matrix: AIR

Analyses	Result	PQL	Qual 1	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	NGE					Analyst: NSB
Gasoline Range Organics (GRO)	95	5.0	١	ug/L	1	10/31/2007 12:08:35 PM
Surr: BFB	114	84.5-129	Q	%REC	1	10/31/2007 12:08:35 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	6.1	0.10	ł	Jg/L	1	10/31/2007 12:08:35 PM
Toluene	ND	0.10	١	ug/L	1	10/31/2007 12:08:35 PM
Ethylbenzene	9.0	0.10	ł	ug/L	1	10/31/2007 12:08:35 PM
Xylenes, Total	12	0.30	ł	ug/L	1	10/31/2007 12:08:35 PM
Surr: 4-Bromofluorobenzene	112	70.2-105	S S	%REC	1	10/31/2007 12:08:35 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 2 of 8

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100	

Date: 14-Nov-07

CLIENT:	San Juan Refining	<b>Client Sample ID:</b>	TP-6
Lab Order:	0710547	<b>Collection Date:</b>	10/29/2007 10:35:00 AM
Project:	River Terrace 4th Qtr-2007-VS	Date Received:	10/30/2007
Lab ID:	0710547-03	Matrix:	AIR
	4 m		·····

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	ANGE				Analyst: NSB
Gasoline Range Organics (GRO)	6.6	5.0	µg/L	1	10/31/2007 12:38:58 PM
Surr: BFB	104	84.5-129	%REC	1	10/31/2007 12:38:58 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	1	10/31/2007 12:38:58 PM
Toluene	ND	0.10	μg/L	1	10/31/2007 12:38:58 PM
Ethylbenzene	0.39	0.10	µg/L	1	10/31/2007 12:38:58 PM
Xylenes, Total	2.3	0.30	μg/L	1	10/31/2007 12:38:58 PM
Surr: 4-Bromofluorobenzene	96.5	70.2-105	%REC	1	10/31/2007 12:38:58 PM

Qualifiers:

\* Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	San Juan Refining			<b>Client Sample</b>	ID: TP-8			
Lab Order:	0710547			Collection D	ate: 10/29/	/2007 11:00:00 AM		
Project: River Terrace 4th		tr-2007-VS		Date Receiv	ed: 10/30/	10/30/2007		
Lab ID:	0710547-04	·		Mat	rix: AIR			
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8015B: GASOLINE RA	NGE				Analyst: NSB		
Gasoline Range	e Organics (GRO)	ND	5.0	µg/L	.1	10/31/2007 1:09:13 PM		
Surr: BFB		102	84.5-129	%REC	1	10/31/2007 1:09:13 PM		
EPA METHOD	8021B: VOLATILES					Analyst: NSB		
Benzene		ND	0.10	µg/L	1	10/31/2007 1:09:13 PM		
Toluene		ND	0.10	µg/L	1	10/31/2007 1:09:13 PM		
Ethylbenzene		0.11	0.10	- µg/L	1	10/31/2007 1:09:13 PM		
Xylenes, Total		0.57	0.30	µg/L	1	10/31/2007 1:09:13 PM		

70.2-105

%REC

93.2

# Hall Environmental Analysis Laboratory, Inc.

Surr: 4-Bromofluorobenzene

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

Date: 14-Nov-07

1

10/31/2007 1:09:13 PM

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 4 of 8

Date: 14-Nov-07

Analyses	Result	PQL Qual Units	DF Date Analyzed
Lab ID:	0710547-05	Matrix:	AIR
Project:	River Terrace 4th Qtr-2007-VS	Date Received:	10/30/2007
Lab Order:	0710547	Collection Date:	10/29/2007 11:04:00 AM
CLIENT:	San Juan Refining	Client Sample ID:	TP-8 FD

EPA METHOD 8015B: GASOLINE RANG	E				Analyst: NSB
Gasoline Range Organics (GRO)	5.4	5.0	µg/L	1	10/31/2007 2:10:01 PM
Surr: BFB	108	84.5-129	%REC	1	10/31/2007 2:10:01 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	1	10/31/2007 2:10:01 PM
Toluene	ND	0.10	µg/L	1	10/31/2007 2:10:01 PM
Ethylbenzene	0.19	0.10	µg/L	1	10/31/2007 2:10:01 PM
Xylenes, Total	1.2	0.30	µg/L	1	10/31/2007 2:10:01 PM
Surr: 4-Bromofluorobenzene	98.9	70.2-105	%REC	1	10/31/2007 2:10:01 PM



Qualifiers:

el

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 5 of 8

CLIENT:San Juan RefiningLab Order:0710547Project:River Terrace 4th Qtr-2007-VSLab ID:0710547-06

Date: 14-Nov-07

Client Sample ID: TP-7 Collection Date: 10/29/2007 11:20:00 AM, Date Received: 10/30/2007 Matrix: AIR

Analyses	Result	PQL Qua	l Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	9.4	5.0	µg/L	1	10/31/2007 2:40:42 PM
Surr: BFB	106	84.5-129	%REC	1	10/31/2007 2:40:42 PM
EPA METHOD 8021B: VOLATILES					Analyst: <b>NSB</b>
Benzene	ND	0.10	µg/L	່ 1	10/31/2007 2:40:42 PM
Toluene	ND	0.10	µg/L	1	10/31/2007 2:40:42 PM
Ethylbenzene	0.14	0.10	µg/L	1	10/31/2007 2:40:42 PM
Xylenes, Total	0.85	0.30	µg/L	1	10/31/2007 2:40:42 PM
Surr: 4-Bromofluorobenzene	96.6	70.2-105	%REC	1	10/31/2007 2:40:42 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 14-Nov-07

CLIENT:	San Juan Refining
Lab Order:	0710547
Project:	River Terrace 4th Qtr-2007-VS
Lab ID:	0710547-07

 Client Sample ID:
 TP-5

 Collection Date:
 10/29/2007 1:45:00 PM

 Date Received:
 10/30/2007

 Matrix:
 AIR

Analyses	Result	PQL	Qual U	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAN	IGE					Analyst: NSB
Gasoline Range Organics (GRO)	180	25	μ	ıg/L	5	10/31/2007 4:11:10 PM
Surr: BFB	112	84.5-129	%	6REC	5	10/31/2007 4:11:10 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.50	μ	ıg/L	5	10/31/2007 4:11:10 PM
Toluene	ND	0.50	H	lg/L	5	10/31/2007 4:11:10 PM
Ethylbenzene	9.8	0.50	μ	ıg/L	5	10/31/2007 4:11:10 PM
Xylenes, Total	46	1.5	μ	ıg/L	5	10/31/2007 4:11:10 PM
Surr: 4-Bromofluorobenzene	106	70.2-105	S %	6REC	5	10/31/2007 4:11:10 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	San Juan Refining			<b>Client Sample ID:</b>	TP-9			
Lab Order:	0710547			<b>Collection Date:</b>	10/29/2007 2:10:00 PM			
Project:	River Terrace 4th (		/2007					
Lab ID:	0710547-08			Matrix:	AIR			
Analyses		Result	PQL Qu	al Units	DF	Date Analyzed		
EPA METHOD	8015B: GASOLINE R	ANGE	•••••••••••••••••••••••••••••••••••••••	· · · · · · · · · · · · · · · · · · ·		Analyst: NSB		
Gasoline Rang	e Organics (GRO)	. 49	5.0	μg/L	1	10/31/2007 3:10:52 PM		
Surr: BFB		113	84.5-129	%REC	1	10/31/2007 3:10:52 PM		

**EPA METHOD 8021B: VOLATILES** 

Benzene ND 0.10 µg/L Toluene ND 0.10 µg/L Ethylbenzene 0.56 0.10 µg/L 4.0 Xylenes, Total 0.30 µg/L Surr: 4-Bromofluorobenzene 105 70.2-105 s %REC

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

Date: 14-Nov-07

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- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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Page 8 of 8

.

Analyst: NSB

10/31/2007 3:10:52 PM

14-Nov-07

Hall Environmental Analysis Laboratory, Inc.

0710547

Lab Order:

vsis Laboratory, Inc.

Analysis Date 10/31/2007 10/31/2007 0/31/2007 0/31/2007 0/31/2007 0/31/2007 0/31/2007 0/31/2007 0/31/2007 10/31/2007 0/31/2007 0/31/2007 0/31/2007 0/31/2007 0/31/2007 10/31/2007 DATES REPORT **Prep Date** OC Batch ID R25851 R25851 R25851 R25851 R25851 R25851 R25851 R25851 R25851 R25851 R25851 R25851 R25851 R25851 R25851 R25851 EPA Method 8015B: Gasoline Range EPA Method 8015B: Gasoline Range EPA Method 8015B: Gasoline Range EPA Method 8015B: Gasoline Range EPA Method 8015B: Gasoline Range EPA Method 8015B: Gasoline Range EPA Method 8015B: Gasoline Range EPA Method 8015B: Gasoline Range EPA Method 8021B: Volatiles EPA Method 8021B: Volatiles EPA Method 8021B: Volatiles EPA Method 8021B: Volatiles EPA Method 8021B: Volatiles EPA Method 8021B: Volatiles EPA Method 8021B: Volatiles EPA Method 8021B: Volatiles Test Name Matrix Air 10/29/2007 10:10:00 AM 10/29/2007 10:35:00 AM MA 00:00:11:00:00 IM 10/29/2007 11:04:00 AM MA 00:29/2007 11:20:00 AM I0/29/2007 9:45:00 AM 10/29/2007 1:45:00 PM 10/29/2007 2:10:00 PM **Collection Date** River Terrace 4th Qtr-2007-VS San Juan Refining **Client Sample ID** TP-8 FD TP-8 TP-6 TP-7 TP-5 TP-9 TP-2 TP-I 0710547-04A 0710547-05A 0710547-06A 0710547-07A 0710547-08A 0710547-01A 0710547-02A 0710547-03A Project: Sample ID Client:

Page 1 of 1

# QA/QC SUMMARY REPORT

Client: San Juan Re	fining							
Project: River Terra	ce 4th Qtr-2	007-VS					W	ork Order: 0710547
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit Qual
Method: EPA Method 8015B: 0	Gasoline Rar	nge						
Sample ID: 0710547-01A DUP		DUP			Batch ID	D: <b>R25851</b>	Analysis Da	ite: 10/31/2007 1:39:28 PM
Gasoline Range Organics (GRO)	ND	µg/L	5.0				0	27.8
Surr: BFB	2117	µg/L	0	106	84.5	129	0	0
Method: EPA Method 8015B: (	Gasoline Rar	nge						
Sample ID: 5ML RB		MBLK			Batch I	D: R25851	Analysis Da	ite: 10/31/2007 9:30:17 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Surr: BFB	20.75	mg/L	0	104	79.2	121		
Sample ID: 2.5UG GRO LCS		LCS			Batch ID	D: R25851	Analysis Da	te: 10/31/2007 6:12:20 PM
Gasoline Range Organics (GRO)	0.5360	mg/L	0.050	104	80	115		
Surr: BFB	21.87	mg/L	0	109	79.2	121		· · · · · · · · · · · · · · · · · · ·
Method: EPA Method 8021B: \	/olatiles							
Sample ID: 0710547-01A DUP		DUP			Batch If	D: <b>R25851</b>	Analysis Da	ite: 10/31/2007 1:39:28 PM
Benzene	ND	µg/L	0.10				0	25
Toluene	ND	µg/L	0.10				0	25
Ethylbenzene	ND	µg/L	0.10				0	25
Xylenes, Total	ND	µg/L	0.30				0.	25
Surr: 4-Bromofluorobenzene	1.896	µg/L	0	94.8	70.2	105	0	0
Method: ÉPA Method 8021B:	/olatiles							
Sample ID: 5ML RB		MBLK			Batch II	D: <b>R25851</b>	Analysis Da	ite: 10/31/2007 9:30:17 AM
Benzene	ND	µg/L	1.0			a.		
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					•
Surr: 4-Bromofluorobenzene	18.74	µg/L	0	93.7	70.2	105		
Sample ID: 100NG BTEX LCS		LCS			Batch II	D: <b>R25851</b>	Analysis Da	ate: 10/31/2007 5:11:46 PM
Benzene	19.99	µg/L	1.0	100	85.9	113		
Toluene	21.05	µg/L	1.0	105	86.4	113		
Ethylbenzene	21.26	µg/L	1.0	106	83.5	118		
Xylenes, Total	61.46	µg/L	2.0	102	83.4	122		
Surr: 4-Bromofluorobenzene	20.81	µg/L	0	104	70.2	105		

- Qualifiers:
- E Value above quantitation range
- J. Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

	Sample	Rec	eipt Cl	necklist			
Client Name SJR				Date and Time	Received:	10/3	0/2007
Work Order Number 0710547				Received by	ARS		
Checklist completed b	5		Date	30/07			
Matrix	Carrier name	UPS	<u>)</u>				
Shipping container/cooler in good condition?		Yes		No 🗌	Not Present		
Custody seals intact on shipping container/cool	er?	Yes		No 🗌	Not Present	Not Shipped	<u> </u>
Custody seals intact on sample bottles?		Yes		No 🗌	N/A	$\checkmark$	
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 🗌			
Il samples received within holding time?		Yes		No 🗌			
Water - VOA vials have zero headspace?	No VOA vials subr	nitted		Yes 🗌	No 🗌		
Water - Preservation labels on bottle and cap m	atch?	Yes		No 🗌	N/A 🗹		
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🗹		
Container/Temp Blank temperature?				4° C ± 2 Accepta	ble		
COMMENTS:				It given sufficient	time to cool.		
Client contacted	Date contacted:			Perse	on contacted		
Contacted by:	Regarding			·			
Comments:						· · · · · · · · · · · · · · · · · · ·	
	<u></u>				······		
				······			
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	<u></u>	<u> </u>					<del></del>
Corrective Action				<u> </u>			

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			Phone	Fax #	Dat	10/29/0	-							T				Date: Date: Date:



#### COVER LETTER

Wednesday, November 14, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace 4th Qtr-2007-VS

Order No.: 0710557

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 10/31/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

0710557-07A

MW #49

Date: 14-Nov-07

CLIENT: Project: Lab Order:	San Juan Refining River Terrace 4th Qtr 0710557	r Sample Summary				
Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date		
0710557-01A	TP-13	R25851	EPA Method 8015B: Gasoline Range	10/30/2007 8:25:00 AM		
0710557-01A	TP-13	R25851	EPA Method 8021B: Volatiles	10/30/2007 8:25:00 AM		
0710557-02A	TP-12	R25869	EPA Method 8015B: Gasoline Range	10/30/2007 8:50:00 AM		
0710557-02A	TP-12	R25869	EPA Method 8021B: Volatiles	10/30/2007 8:50:00 AM		
0710557-03A	TP-11	R25869	EPA Method 8015B: Gasoline Range	10/30/2007 9:15:00 AM		
0710557-03A	TP-11	R25869	EPA Method 8021B: Volatiles	10/30/2007 9:15:00 AM		
0710557-04A	TP-10	R25869	EPA Method 8015B: Gasoline Range	10/30/2007 10:15:00 AM		
0710557-04A	TP-10	R25869	EPA Method 8021B: Volatiles	10/30/2007 10:15:00 AM		
0710557-05A	TP-3	R25869	EPA Method 8015B: Gasoline Range	10/30/2007 10:35:00 AM		
0710557-05A	ТР-3	R25869	EPA Method 8021B: Volatiles	10/30/2007 10:35:00 AM		
0710557-06A	DW #1	R25869	EPA Method 8015B: Gasoline Range	10/30/2007 11:15:00 AM		
0710557-06A	DW #1	R25869	EPA Method 8021B: Volatiles	10/30/2007 11:15:00 AM		
0710 <del>5</del> 57-07A	MW #49	R25869	EPA Method 8015B: Gasoline Range	10/30/2007 1:45:00 PM		

EPA Method 8021B: Volatiles

R25869

Page 1 of 1

10/30/2007 1:45:00 PM

CLIENT: Lab Order:	San Juan Refining 0710557 Diana Tanana Atla Ota	2007 115		Client Sample Collection D	ID: TP-13 ate: 10/30/	TP-13 10/30/2007 8:25:00 AM			
Project: River Terrace 4th Qtr-2007-				Date Receiv Mat	'ed: 10/31/ rix: AIR	10/31/2007 AIR			
	0/10337-01								
Analyses		Result	PQL	Qual Units	DF	Date Analyzed			
EPA METHOD	8015B: GASOLINE RAN	GE		·····		Analyst: NSB			
Gasoline Range	e Organics (GRO)	ND	5.0	μg/L	1	10/31/2007 3:41:01 PM			
Surr: BFB		88.3	84.5-129	%REC	1	10/31/2007 3:41:01 PM			
EPA METHOD	8021B: VOLATILES					Analyst: NSB			
Benzene		ND	0.10	µg/L	1	10/31/2007 3:41:01 PM			
Toluene		ND	0.10	µg/L	1	10/31/2007 3:41:01 PM			
Ethylbenzene		ND	0.10	µg/L	1	10/31/2007 3:41:01 PM			
Xylenes, Total		ND	0.30	µg/L	1	10/31/2007 3:41:01 PM			

70.2-105

%REC

79.0

# Hall Environmental Analysis Laboratory, Inc.

Surr: 4-Bromofluorobenzene

Date: 14-Nov-07

1

10/31/2007 3:41:01 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0710557 River Terrace 4th Qtr 0710557-02	-2007-VS		Client Sample Collection D Date Receiv Mat	ID: TP-12 ate: 10/30/ red: 10/31/ rix: AIR	/2007 8:50:00 AM /2007
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Range	e Organics (GRO)	ND	5.0	µg/L	1	11/1/2007 11:36:04 AM
Surr: BFB	•	105	84.5-129	%REC	1	11/1/2007 11:36:04 AM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Benzene		ND	0.10	µg/L	1	11/1/2007 11:36:04 AM
Toluene		ND	0.10	µg/L	1	11/1/2007 11:36:04 AM
Ethylbenzene		ND	0.10	µg/L	1	11/1/2007 11:36:04 AM
Xylenes, Total		ND	0.30	µg/L	1	11/1/2007 11:36:04 AM
Surr: 4-Brom	ofluorobenzene	91.8	70.2-105	%REC	1	11/1/2007 11:36:04 AM

91.8

# Hall Environmental Analysis Laboratory, Inc.

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Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Not Detected at the Reporting Limit ND
- Spike recovery outside accepted recovery limits S
- В Analyte detected in the associated Method Blank
- Η Holding times for preparation or analysis exceeded

Date: 14-Nov-07

- MCL Maximum Contaminant Level
- Reporting Limit RL

3

Page 2 of 7



Surr: 4-Bromofluorobenzene

11/1/2007 11:36:04 AM

Date: 14-Nov-07

CLIENT:	San Juan Refining
Lab Order:	0710557
Project:	River Terrace 4th Qtr-2007-VS
Lab ID:	0710557-03

 Client Sample ID:
 TP-11

 Collection Date:
 10/30/2007 9:15:00 AM

 Date Received:
 10/31/2007

 Matrix:
 AIR

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	µg/L	1	11/1/2007 12:06:44 PM
Surr: BFB	102	84.5-129	%REC	1	11/1/2007 12:06:44 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	1	11/1/2007 12:06:44 PM
Toluene	ND	0.10	µg/L	1	11/1/2007 12:06:44 PM
Ethylbenzene	ND	0.10	µg/L	1	11/1/2007 12:06:44 PM
Xylenes, Total	ND	0.30	µg/L	1	11/1/2007 12:06:44 PM
Surr: 4-Bromofluorobenzene	91.7	70.2-105	%REC	1	11/1/2007 12:06:44 PM

Qualifiers:

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- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit
CLIENT:San Juan RefiningLab Order:0710557Project:River Terrace 4th Qtr-2007-VSLab ID:0710557-04

Date: 14-Nov-07

 Client Sample ID:
 TP-10

 Collection Date:
 10/30/2007 10:15:00 AM

 Date Received:
 10/31/2007

 Matrix:
 AIR

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	µg/L	1	11/1/2007 12:37:38 PM
Surr: BFB	103	84.5-129	%REC	1	11/1/2007 12:37:38 PM
EPA METHOD 8021B: VOLATILES					Analyst: <b>NSB</b>
Benzene	ND	0.10	μg/L	1	11/1/2007 12:37:38 PM
Toluene	ND	0.10	µg/L	.1	11/1/2007 12:37:38 PM
Ethylbenzene	ND	0.10	µg/L	1	11/1/2007 12:37:38 PM
Xylenes, Total	ND	0.30	µg/L	1	11/1/2007 12:37:38 PM
Surr: 4-Bromofluorobenzene	92.4	70.2-105	%REC	1	11/1/2007 12:37:38 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 4 of 7



Date: 14-Nov-07

Analyses	Result	POL Qual Units	DF Date Analyzed
Lab ID:	0710557-05	Matrix:	AIR
Project:	River Terrace 4th Qtr-2007-VS	Date Received:	10/31/2007
Lab Order:	0710557	Collection Date:	10/30/2007 10:35:00 AM
CLIENT:	San Juan Refining	Client Sample ID:	TP-3

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAM	IGE			······································	Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	µg/L	1	11/1/2007 1:38:59 PM
. Surr: BFB	110	84.5-129	%REC	1	11/1/2007 1:38:59 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	1	11/1/2007 1:38:59 PM
Toluene	ND	0.10	µg/L	1	11/1/2007 1:38:59 PM
Ethylbenzene	ND	0.10	µg/L	1	11/1/2007 1:38:59 PM
Xylenes, Total	ND	0.30	µg/L	1	11/1/2007 1:38:59 PM
Surr: 4-Bromofluorobenzene	98.1	70.2-105	%REC	1	11/1/2007 1:38:59 PM

Qualifiers:

*	Value	exceeds	Maximum	Contaminant	Level

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:San Juan RefiningLab Order:0710557Project:River Terrace 4th Qtr-2007-VSLab ID:0710557-06

Date: 14-Nov-07

Client Sample ID: DW #1 Collection Date: 10/30/2007 11:15:00 AM Date Received: 10/31/2007 Matrix: AIR

Analyses	Result	PQL Qi	ial Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAM	IGE		······································		Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	µg/L	1	11/1/2007 2:09:41 PM
Surr: BFB	107	84.5-129	%REC	1	11/1/2007 2:09:41 PM
EPA METHOD 8021B: VOLATILES					Analyst: <b>NSB</b>
Benzene	ND	0.10	µg/L	1	11/1/2007 2:09:41 PM
Toluene	ND	0.10	µg/L	1	11/1/2007 2:09:41 PM
Ethylbenzene	ND	0.10	µg/L	1	11/1/2007 2:09:41 PM
Xylenes, Total	ND	0.30	μg/L	1	11/1/2007 2:09:41 PM
Surr: 4-Bromofluorobenzene	96.3	70.2-105	%REC	1	11/1/2007 2:09:41 PM

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



Date: 14-Nov-07

CLIENT:San Juan RefiningLab Order:0710557Project:River Terrace 4th Qtr-2007-VSLab ID:0710557-07

Client Sample ID: MW #49 Collection Date: 10/30/2007 1:45:00 PM Date Received: 10/31/2007 Matrix: AIR

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	NGE	····			Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	µg/L	1	11/1/2007 2:40:24 PM
Surr: BFB	101	84.5-129	%REC	1	11/1/2007 2:40:24 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	1	11/1/2007 2:40:24 PM
Toluene	ND	0.10	µg/L	1	11/1/2007 2:40:24 PM
Ethylbenzene	ND	0.10	µg/L	1	11/1/2007 2:40:24 PM
Xylenes, Total	ND	0.30	µg/L	1	11/1/2007 2:40:24 PM
Surr: 4-Bromofluorobenzene	90.0	70.2-105	%REC	1	11/1/2007 2:40:24 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 7 of 7

14-Nov-07

9 1

Hall Environmental Analysis Laboratory, Inc.

Lab Order:	0710557						
Client:	San Juan Refining			· · · · ·	DATESR	EPORT	
Project:	River Terrace 4th Qtr-	-2007-VS					
Sample ID	Client Sample ID	Collection Date	Matrix -	Test Name	QC Batch ID	Prep Date	Analysis Date
0710557-01A	TP-13	10/30/2007 8:25:00 AM	Air	EPA Method 8015B: Gasoline Range	R25851		10/31/2007
		·		EPA Method 8021B: Volatiles	R25851		10/31/2007
0710557-02A	TP-12	10/30/2007 8:50:00 AM		EPA Method 8015B: Gasoline Range	R25869		11/1/2007
				EPA Method 8021B: Volatiles	R25869		11/1/2007
0710557-03A	TP-11	10/30/2007 9:15:00 AM		EPA Method 8015B: Gasoline Range	R25869		11/1/2007
				EPA Method 8021B: Volatiles	R25869		11/1/2007
0710557-04A	TP-10	10/30/2007 10:15:00 AM		EPA Method 8015B: Gasoline Range	R25869		11/1/2007
				EPA Method 8021B: Volatiles	R25869		11/1/2007
0710557-05A	TP-3	10/30/2007 10:35:00 AM		EPA Method 8015B: Gasoline Range	R25869		11/1/2007
				EPA Method 8021B: Volatiles	R25869		11/1/2007
0710557-06A	DW #1	10/30/2007 11:15:00 AM		EPA Method 8015B: Gasoline Range	R25869		11/1/2007
				EPA Method 8021B: Volatiles	R25869		11/1/2007
0710557-07A	MW #49	10/30/2007 1:45:00 PM		EPA Method 8015B: Gasoline Range	R25869		11/1/2007
				EPA Method 8021B: Volatiles	R25869		11/1/2007

9

Page 1 of

## **QA/QC SUMMARY REPORT**

ent: San Juan	Refining								
Project: River Ter	rrace 4th Qtr-2	007-VS					W	ork Ordei	•• 0710557
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8015	B: Gasoline Rar	nge							
Sample ID: 0710547-01A DU	>	DUP			Batch I	D: <b>R25851</b>	Analysis Dat	e: 10/31/	2007 1:39:28 PM
Gasoline Range Organics (GRO	D) ND	µg/L	5.0				0	27.8	
Surr: BFB	2117	µg/L	0	106	84.5	129	0	0	
Method: EPA Method 8015	B: Gasoline Rar	nge							
Sample ID: 5ML RB		MBLK			Batch I	D: <b>R25851</b>	Analysis Dat	e: 10/31	2007 9:30:17 AM
Gasoline Range Organics (GRC	D) ND	mg/L	0.050						
Surr: BFB	20.75	mg/L	0	104	79.2	121			
Sample ID: 2,5UG GRO LCS		LCS			Batch I	D: <b>R25851</b>	Analysis Dat	e: 10/31/	2007 6:12:20 PM
Gasoline Range Organics (GRC	0.5360	mg/L	0.050	104	80	115			
Surr: BFB	21.87	mg/L	0	109	79.2	121			
Method: EPA Method 8021	B: Volatiles								
Sample ID: 0710547-01A DUR	>	DUP			Batch I	D: <b>R25851</b>	Analysis Dat	e: 10/31/	2007 1:39:28 PM
Benzene	ND	ua/L	0.10				0	25	
Toluene	ND	µg/L	0.10				0	25	•
Ethylbenzene	ND	µg/L	0.10		,		0	25	
Xylenes, Total	ND	µg/L	0.30				0	25	
Surr: 4-Bromofluorobenzene	1.896	µg/L	0	94.8	70.2	105	0	0	
thod: EPA Method 8021	B: Volatiles								
Sample ID: 5ML RB		MBLK			Batch I	D: <b>R25851</b>	Analysis Dat	e: 10/31/	2007 9:30:17 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 4-Bromofluorobenzene	18.74	µg/L	0	93.7	70.2	105			
Sample ID: 100NG BTEX LCS	6	LCS			Batch I	D: <b>R25851</b>	Analysis Dat	e: 10/31/	2007 5:11:46 PM
Benzene	19.99	µg/L	1.0	100	85.9	113			
Toluene	21.05	µg/L	1.0	105	86.4	113			
Ethylbenzene	21.26	µg/L	1.0	106	83.5	118			
Xylenes, Total	61.46	µg/L	2.0	102	83.4	122			
Surr 4-Bromofluorobenzene	20.81	ug/l	0	104	70.2	105			



#### Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

## QA/QC SUMMARY REPORT

Client: San Juan Re	fining									
Project: River Terrac	e 4th Qtr-2	007-VS					W	ork (	Order:	0710557
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPD	Limit (	Qual
Method: EPA Method 8015B: G	asoline Rar	nge								
Sample ID: 0710557-02A DUP		DUP			Batch II	D: <b>R25869</b>	Analysis Da	ate:	11/1/20	007 1:08:20 PM
Gasoline Range Organics (GRO)	ND	µg/L	5.0				0	27.	8	
Surr: BFB	2183	µg/L	0	109	84.5	129	0	0		·····
Method: EPA Method 8015B: G	Sasoline Rar	nge								
Sample ID: 5ML RB		MBLK			Batch II	D: <b>R25869</b>	Analysis Da	ite:	11/1/20	007 9:27:08 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050							
Surr: BFB	21.39	mg/L	0	107	79.2	121				
Sample ID: 2.5UG GRO LCS		LCS			Batch II	D: <b>R25869</b>	Analysis Da	ite:	11/1/20	07 5:28:52 PM
Gasoline Range Organics (GRO)	0.5320	mg/L	0.050	103	80	115				
Surr: BFB	22.52	mg/L	0	113	79.2	121				
Method: EPA Method 8021B: V	/olatiles									
Sample ID: 0710557-02A DUP		DUP			Batch II	D: <b>R25869</b>	Analysis Da	ite:	11/1/20	007 1:08:20 PM
Benzene	ND	µg/L	0.10				0	25	I	
Toluene	ND	µg/L	0.10				0	25	i	
Ethylbenzene	ND	µg/L	0.10				0	25	i	
Xylènes, Total	ND	µg/Ŀ	0.30				0	25	i	
Surr: 4-Bromofluorobenzene	1.941	µg/L	0	97.0	70.2	105	0	0		
Method: ÊPA Method 8021B: V	/olatiles									
Sample ID: 5ML RB		MBLK			Batch II	D: <b>R25869</b>	Analysis Da	ite:	11/1/20	007 9:27:08 AM
Benzene	ND	µg/L	1.0		L.					
Toluene	ND	µg/L	1.0							
Ethylbenzene	ND	µg/L	1.0							
Xylenes, Total	ND	µg/L	2.0							
Surr: 4-Bromofluorobenzene	19.34	µg/L	0	96.7	70.2	105				
Sample ID: 100NG BTEX LCS		LCS			Batch II	D: <b>R25869</b>	Analysis Da	ite:	11/1/20	007 3:58:00 PM
Benzene	20.97	µg/L	1.0	105	85.9	113				
Toluene	20.95	µg/L	1.0	104	86.4	113				
Ethylbenzene	21.39	µg/L	1.0	105	83.5	118	ı			
Xylenes, Total	61.20	µg/L	2.0	101	83.4	122				
Surr: 4-Bromofluorobenzene	18.70	µg/L	0	93.5	70.2	105	÷			

- Qualifiers:
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

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Samp	ble Rece	eipt (	Checklist				
Client Name SJR			Date and Time	Received:		10/31/2	2007
Work Order Number 0710557			Received by	ARS			
Checklist completed b			31/07				
Matrix Carrier nam	ie <u>UPS</u>						
Shipping container/cooler in good condition?	Yes	$\checkmark$	No	Not Present			
Custody seals intact on shipping container/cooler?	Yes	$\checkmark$	No 🗌	Not Present		Not Shipped	]
Custody seals intact on sample bottles?	Yes		No 🗌	N/A	$\checkmark$		
Chain of custody present?	Yes	$\checkmark$	No 🗌				
Chain of custody signed when relinquished and received?	Yes	$\checkmark$	No 🗌				
Chain of custody agrees with sample labels?	Yes	✓	No 🗌				
Samples in proper container/bottle?	Yes	$\checkmark$	No 🗌			·	
Sample containers intact?	Yes	$\checkmark$	No 🗌				
Sufficient sample volume for indicated test?	Yes		No 🗌				
All samples received within holding time?	Yes		No 🗌				
Water - VOA vials have zero headspace? No VOA vials si	ubmitted	$\checkmark$	Yes	No 🗌			
Water - Preservation labels on bottle and cap match?	Yes		No 🗌	N/A 🗹			
Water - pH acceptable upon receipt?	Yes		No 🗌	N/A 🗹			
Container/Temp Blank temperature?			4° C ± 2 Accepta	ble			
COMMENTS:			It given sufficient	time to cool.			
		: :					
Client contacted Date contacted:	<u> </u>		Perso	on contacted			
Contacted by: Regarding							
Comments:					·····		
Corrective Action							

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QA/ QC Package: Std 🗖 Level 4 🗹 Other:	Project Name:	River Terrace 4th are-2007 VS	Project #:		Project Manager	(inder they tado	Sampler: CAT/RM.K	Sample Temperature:	Number/Volume HgCl, HNO, A11/53	1-Tedar	2	-0	T			P+-			Ť	Received By: (Signature)	Received By: (Signature)
if.custody record	Juan Refining		Zd 4990	ELYTS NW STYL3			1 332-414 1	1/632.39/1	e Matrix Sample I.D. No.	A NAME TP-13	1 TP-12	11-dL	01-d1 \$	1 70.3	A Dw# -	64#(MW )			<	Relinquigneed By: (Sigheture)	Relinquished By: (Signature)
0	N V		#52	6/a			Ses	505	Time	B25	850	2	10 K	60	21	<u>E</u> 5,				Stee.	Time:
	Client: <b>A</b>		Address				Phone #	Fax #:	Date	10.30-07										y 30 of	Date:



#### COVER LETTER

Wednesday, January 10, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 1-3-07

Dear Cindy Hurtado:

Order No.: 0701033

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 1/4/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE ■Suite D ■Albuquerque, NM 87109 505.345.3975 ■Fax 505.345.4107 www.hallenvironmental.com

CLIENT:	San Juan Refining			Client Sam	ple ID: GAC	1 Eff
Lab Order:	0701033	•		Collection	<b>Date:</b> 1/3/20	007 12:30:00 PM
Project:	GAC 1-3-07			Date Ree	eived: 1/4/20	)07
Lab ID:	0701033-01		•	N	latrix: AQU	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range C	Organics (DRO)	6.2	1.0	mg/L	1	1/9/2007 12:17:01 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	1/9/2007 12:17:01 PM
Surr: DNOP		91.4	58-140	%REC	1	1/9/2007 12:17:01 PM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: LMM
Gasoline Rang	e Organics (GRO)	0.093	0.050	mg/L	1	1/5/2007 1:23:03 PM
Surr: BFB		101	79.2-121	%REC	1	1/5/2007 1:23:03 PM
EPA METHOD	8021B: VOLATILES					Analyst: LMM
Benzene		ND	1.0	µg/L	1	1/5/2007 1:23:03 PM
Toluene		ND	1.0	µg/L	1	1/5/2007 1:23:03 PM
Ethylbenzene		ND	1.0	µg/L	. 1	1/5/2007 1:23:03 PM
Xylenes, Total		ND	3.0	µg/L	<sup>.</sup> 1	1/5/2007 1:23:03 PM
Surr: 4-Bron	nofluorobenzene	81.5	70.2-105	%REC	1	1/5/2007 1:23:03 PM

Date: 10-Jan-07

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 2 1/3
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

_Cli	ent:
r	oject:

San Juan Refining GAC 1-3-07

Work Order: 0701033

Analyte	Result	Units	PQL	%Rec	LowLimit H	HighLimit	%RPD RPD	DLimit Qual
Method: SW8015 Sample ID: MB-12086		MBLK			Batch ID	: 12086	Analysis Date:	1/9/2007 9:26:30 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0					
Sample ID: LCS-12086		LCS	5.0		Batch ID	: 12086	Analysis Date:	1/9/2007 10:00:35 AM
Diesel Range Organics (DRO) Sample ID: LCSD-12086	5.093	mg/L LCSD	1.0	102	74 Batch ID	157 : <b>12086</b>	Analysis Date:	1/9/2007 10:23:49 AM
Diesel Range Organics (DRO)	4.417	mg/L	1.0	88.3	74	157	14.2 23	3
Method: SW8015								
Sample ID: 0701033-01A MSD		MSD			Batch ID	: R22023	Analysis Date:	1/5/2007 2:23:09 PM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	0.5960	mg/L MBLK	0.050	101	80 Batch ID	115 : <b>R22023</b>	2.03 8.3 Analysis Date:	9 · 1/5/2007 9:36:07 AM
Gasoline Range Organics (GRO) Sample ID: 2.50G GRO LCS	ND	mg/L LCS	0.050		Batch ID	: <b>R2202</b> 3	Analysis Date:	1/5/2007 11:36:27 AM
Gasoline Range Organics (GRO) Sample ID: 0701033-01A MS	0.4960	mg/L <i>MS</i>	0.050	99.2	80 Batch ID	115 : <b>R22023</b>	Analysis Date:	1/5/2007 1:53:05 PM
Gasoline Range Organics (GRO)	0.5840	mg/L	0.050	98.1	80	115		
Method: SW8021 Cample ID: 5ML RB		MBLK			Batch ID	): R22023	Analysis Date:	1/5/2007 9:36:07 AM
Benzene	ND	µg/L	1.0	•.				
Toluene	ŃD	µg/L	1.0					
Ethylbenzene	ND	μg/L	1.0					
Xylenes, Total	ND	µg/L	3.0					
Sample ID: 100NG BTEX LCS		LCS			Batch ID	): <b>R22023</b>	Analysis Date:	1/5/2007 11:06:27 AM
Benzene	17.80	µg/L	1.0	89.0	85.9	113		
Toluene	17.87	µg/L	1.0	89.3	86.4	113		
Ethylbenzene	17.69	µg/L	1.0	88.4	83.5	118		
Xylenes, Total	53.20	µg/L	3.0	88.7	83.4	122		

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 2/3

	Sample	Recei	pt Che	cklist					
Client Name SJR				Date and Time	e Received:			1/4/2007	
Work Order Number 0701033				Received by	/ TĽS				
Checklist completed by Jane Signature		9	Date	4.07					
Matrix	Carrier name	UPS		· · · · ·			n. 1915 - Alfred		• •
Shipping container/cooler in good condition?		Yes		No 🗌	Not Present	È.	e e Tanan e	•	
Custody seals intact on shipping container/coole	er?	Yes	✓	No 🗌	Not Present		Not Shipped		
Custody seals intact on sample bottles?		Yes		No 🗌	N/A				
Chain of custody present?		Yes [	$\checkmark$	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	$\checkmark$	No 🗔		•			
Sample containers intact?	、	Yes		No 🗌					
Sufficient sample volume for indicated test?	· · ·	Yes		No 🗹	;	. • <u>.</u>			
All samples received within holding time?	•	Yes		No 🗌					· · ·
Water - VOA vials have zero headspace?	No VOA vials sub	mitted		Yes 🗹	No	]			
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A	·			
Container/Temp Blank temperature?		Ę	5°	4° C ± 2 Accept If given sufficient	table nt time to cool.		· ·		
COMMENTS:									
· · · ·									
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· ·									
Client contacted	Date contacted:			Pe	rson contacted	J ·		·····	_
Contacted by:	Regarding			· · · · · · · · · · · · · · · · · · ·					_
Comments:									
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Corrective Action					· · · ·				_
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					es/Diesel)	2) 89 	,08 pt	ита Метни	X				 		 	 	, in
					(1 <u>2007-</u> )	Hai	186 T		$\sim$				 		 -		emark
												<u></u>	+				<u> </u>
	QA/ QC Package: Std 🗖 Level 4 🗍 Other:	Project Name: GRC 1-3-07	Project #:		Project Manager:	Sampler BOD Kig Kow	Sample Temperature:	Number/Volume H9Cl <sub>2</sub> HNO <sub>3</sub>	3-LOA Hel								Received By: (Signature) 1/1/67 Received By: (Signature)
	N-OF-CUSTODY RECORD	AN JUHN REFINING	450 Rel 4950	3/20 mfix 12, NM 87413		505-632-4161	505-632-3911	Time Matrix Sample I.D. No.	12300 H20 CAC 1 FTF	-						<	Time: Relinquished By: (Signature)
·	CHA	Client:	Address:	P-		Phone #:	Fax #:	Date	103-07								Data: Data: Date:



#### COVER LETTER

Monday, January 15, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC Analysis 1/10/07

Order No.: 0701139

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 1/11/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy/reeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 G Fax 505.345.4107 www.hallenvironmental.com

CLIENT: Lab Order:	San Juan Refin 0701139	ning	·		Client Sa Collect	mple ID:	GAC	C 1 Eff /2007 9:30:00 AM
Project:	GAC Analysis	1/10/07			Data I	Donaivad.	1/11	/2007 9.50.00 / 101
i i m					Date I	Matrix.		TEOUS
Lab ID:	0701139-01						AQU	
Analyses			Result	PQL	Qual Units		DF	Date Analyzed
EPA METHOD	8015B: DIESEL R	RANGE						Analyst: SCC
Diesel Range C	organics (DRO)		. ND	1.0	mg/L		1	1/12/2007 1:38:36 AM
Motor Oil Range	e Organics (MRO)		ND	5.0	mg/L		1	1/12/2007 1:38:36 AM
Surr: DNOP			129	58-140	%REC		1.	1/12/2007 1:38:36 AM
EPA METHOD	8015B: GASOLIN	IE RANG	E					Analyst: LMM
Gasoline Range	e Organics (GRO)		ND	0.050	mg/L		1	1/13/2007 2:16:05 AM
Surr: BFB			103	79.2-121	%REC		1	1/13/2007 2:16:05 AM
		_				-		
EPA METHOD	8021B: VOLATIL	ES						Analyst: LMM
Benzene	· .		ND	1.0	µg/L		1.	1/13/2007 2:16:05 AM
Toluene		e statue Frank	ND	1.0	µg/Ĺ		1	1/13/2007 2:16:05 AM
Ethylbenzene		·	ND	1.0	μg/L		1	1/13/2007 2:16:05 AM
Xylenes, Total	· ·		ND	3.0	μg/L		1	1/13/2007 2:16:05 AM
Surr: 4-Brom	ofluorobenzene		86.2	70.2-105	%REC		1	1/13/2007 2:16:05 AM

Date: 15-Jan-07

Value exceeds Maximum Contaminant Level B An

E Value above quantitation range

Qualifiers:

\*

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 1 of 1

1/3



# QA/QC SUMMARY REPORT

С	lien	t	:

San Juan Refining GAC Analysis 1/10/07

roject: GAC Analys:	is 1/10/07						Wor	k Order: 0701139
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD R	PDLimit Qual
Method: SW8015								
Sample ID: MB-12103		MBLK			Batch	ID: 12103	Analysis Date:	1/11/2007 10:15:38 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0					
Sample ID: LCS-12103		LCS			Batch	ID: 12103	Analysis Date:	1/11/2007 10:49:27 PM
Diesel Range Organics (DRO)	5.396	mg/L	1.0	108	74	157	· · · ·	
Sample ID: LCSD-12103		LCSD			Batch	ID: 12103	Analysis Date:	1/11/2007 11:57:08 PM
Diesel Range Organics (DRO)	5.637	mg/L	1.0	113	74	157	4.37	23
Method: SW8015								
Sample ID: 0701139-01A MSD		MSD			Batch	ID: R22096	Analysis Date:	1/13/2007 3:16:24 AM
Gasoline Range Organics (GRO)	0.5182	mg/L	0.050	104	80	115	1,99	8.39
Sample ID: 5ML RB		MBLK			Batch	ID: R22096	Analysis Date:	1/12/2007 12:13:27 PM
Gasoline Range Organics (GRO)	ND	ma/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch	ID: R22096	Analysis Date:	1/12/2007 2:14:10 PM
Gasoline Range Organics (GRO)	0.5570	ma/l	0.050	111	80	115		
Sample ID: 0701139-01A MS	0.0070	MS	0.000	, , ,	Batch	ID <sup>.</sup> <b>B22096</b>	Analysis Date	1/13/2007 2:46:14 AM
Gasoline Bange Organics (GRO)	0.5286	mail	0.050	106	80	115		1/10/2007 2.40.14 / 10
							<u> </u>	
Method: SW8021								
ample ID: 0701139-01A MSD		MSD			Batch	ID: <b>R22096</b>	Analysis Date	: 1/13/2007 3:16:24 AM
enzene	5.712	µg/L	1.0	95.2	85.9	113	2.80	27
Toluene	35.37	µg/L	1.0	95.6	86.4	113	3.46	19
Ethylbenzene	8.384	µg/∟	1.0	93.2	83.5	118	2.82	10
Xylenes, l'otal	41.97	µg/L	3.0	105	83.4 Datah	122	3.38	13
Sample ID: SML RB		MBLK			Batch	ND: R22096	Analysis Date	: 1/12/2007 12:13:27 PM
Benzene	ND	µg/L	1.0					
loluene	ND	µg/L	1.0					
	ND -	µg/L	1.0					
Sample ID: 100NC RTEX LCS	ND	µg/L	3.0		Detab		Amelia Mata	
-		L03			Batch	11D: R22096	Analysis Date	: 1/12/2007 1:44:01 PM
Benzene	18.15	µg/L	1.0	90.8	85.9	113		
l oluene	18.72	µg/L	1.0	93.6	86.4	113		
Ethyldenzene Xudenze Tetal	10.94	µg/L	1.0	94.7	83.5	118		
Sample ID: 0701139-01A MS	50.00	µy/L MS	3.0	94.5	00.4 Batch		Analysis Data	1/12/2007 2:46:14 AM
Depress	E 074	ue <sup>n</sup>	4.0	07.0		140	Analysis Date	. 1/15/2007 2.40114 AW
	5.874	µg/L	1.0	97.9	85.9	113		
Fthylhenzene	30.02 8 624	μy/L μg/l	1.0 1 N	99.0 05 r	00.4 83 5	113		
Xvlenes, Total	43 42	ua/l	3.0	109	83.4	122		

Qua	ifiers:	<u> </u>	· · · · · · · · · · · · · · · · · · ·	<u> </u>
Е	Value above quantitation range	н	Holding times for preparation or analysis exceeded	
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits	Page 1
·			2/3	

	Sample	Receip	ot Che	ecklist					
Client Name SJR				Date and Ti	me Received:		. 1/1	1/2007	
Work Order Number 0701139				Received	by TLS				
Checklist completed by Signature	Carrier name		Date	11,07	· · · · · · · · · · · · · · · · ·				
Shipping container/cooler in good condition?		Yes	2	No 🗔	Not Present				
Custody seals intact on shipping container/cooler	?	Yes		No 🗌	Not Present		Not Shipped		
Custody seals intact on sample bottles?		Yes [		No 🗌	N/A				
Chain of custody present?		Yes		No 🗌					
Chain of custody signed when relinquished and r	eceived?	Yes		No 🗌					
Chain of custody agrees with sample labels?		Yes		No 🗌	· · · · ·	. • ·			
Samples in proper container/bottle?		Yes [		No 🗌					sta de la
Sample containers intact?	ŕ	Yes		No 🗔	•				. ;
Sufficient sample volume for indicated test?		Yes		No 🗌			· · ·		
All samples received within holding time?		Yes	~	No 🗌					
Water - VOA vials have zero headspace?	No VOA vials sub	mitted		Yes 🗹	No	]			
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🔽				
Container/Temp Blank temperature?		5	0	4° C ± 2 Acce If given suffic	eptable ient time to cool.			• • •	
COMMENTS:									
· .									
Client contacted	Date contacted:			i	Person contacted	i			
Contacted by:	Regarding								
Commonitor									
Comments.	· ·			. · · ····		_, ·			
· · · · · · · · · · · · · · · ·				· ·					
			r		<u> </u>				
Corrective Action					·				
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		ABORAT	, Suite D	5 Fax 505	ental.com					/)	(AC	B (N	8520										
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			4901	Tel, 50	WWW. F					7H) (121)	)8 bor 18 bor 19 no 7	IVIETI METI M	8340 EDC (										
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	r	4 <b>.</b>		I			(Alc	(150) (121)	)8).s <del>.</del>	Hai .		₩ 	BTEX	X								Remark	
1 A.	QA / QC Package:	Std 🖸 Level 4 🗖	Other:	Project Name:	GAC 1-10-07	Project #:		Project Manager:	<	Sampler: And Ann tal	Sample Temper Burke:	Preservative	Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> OTOV 3.0	H VOA HC/								Received By: (Signature) 1/11/07	Redeived by: TSignature)
				TUAN Refining		60 Red 4990	m leld NM	87413		-632-4161	- 632- 39/1		Matrix Sample I.D. No.	Had GAC I Eft							V	Relindushed (By: (Signature)	Relinquished By (Signature)
				Client: SAN		Address: #5	13/0	~ ~		Phone #: 555	Fax #: 505-		Date	1-10-07 9:30	• •							Date: Time:	Date: Time:



#### COVER LETTER

Tuesday, February 13, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 2-08-07

Dear Cindy Hurtado:

Order No.: 0702097

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 2/9/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE ■Suite D ■Albuquerque, NM 87109 505.345.3975 ■Fax 505.345.4107 www.hallenvironmental.com

CLIENT:	San Juan Refining			Clie	nt Sample ID:	GAC	1 Eff
Lab Order:	0702097			C	ollection Date:	2/8/20	007 8:30:00 AM
Project:	GAC 2-08-07			I	Date Received:	2/9/20	07
Lab ID:	0702097-01				Matrix:	AQUI	EOUS
Analyses		Result	PQL	Qual U	Inits	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					······································	Analyst: SCC
Diesel Range (	Drganics (DRO)	ND	1.0	m	ig/L	1	2/12/2007 5:50:32 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	m	ig/L	1	2/12/2007 5:50:32 PM
Surr: DNOP		115	58-140	%	REC	1	2/12/2007 5:50:32 PM
EPA METHOD	8015B: GASOLINE RANG	E					Anaiyst: LMM
Gasoline Rang	e Organics (GRO)	ND	0.050	m	ng/L	1	2/9/2007 9:03:33 PM
Surr: BFB		107	79.2-121	· · · · · · · · · · · · · · · · · · ·	REC	1	- 2/9/2007 9:03:33 PM
			•				
EPA METHOD	8021B: VOLATILES						Analyst: LMM
Methyl tert-but	yl ether (MTBE)	ND	2.5	μ	g/L	1	2/9/2007 9:03:33 PM
Benzene		2.9	1.0	. μ	g/L	1	2/9/2007 9:03:33 PM
Toluene	, · ·	ND	1.0	μ	g/L	1	2/9/2007 9:03:33 PM
Ethylbenzene		ND	1.0	·μ	g/L	1	2/9/2007 9:03:33 PM
Xylenes, Total		ND	. 3.0	μ	g/L	1	2/9/2007 9:03:33 PM
Surr: 4-Bror	nofluorobenzene	88.9	70.2-105	9	6REC	1	2/9/2007 9:03:33 PM

Date: 13-Feb-07

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

RL Reporting Limit

1/3

Page 1 of 1



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# QA/QC SUMMARY REPORT

Client	:
le rojec	t:

San Juan Refining GAC 2-08-07

Work Order: 0702097

Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RP	DLimit Qual
Method: SW8015							
Sample ID: MB-12299		MBLK			Batch ID: 1229	9 Analysis Date:	2/12/2007 4:08:22 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0				
Motor Oil Range Organics (MRO)	ND	mg/L	5.0				
Sample ID: LCS-12299		LCS			Batch ID: 1229	9 Analysis Date:	2/12/2007 4:42:25 PM
Diesel Range Organics (DRO)	5.505	mg/L	1.0	110	74 157		
Sample ID: LCSD-12299		LCSD			Batch ID: 1229	9 Analysis Date:	2/12/2007 5:16:29 PM
Diesel Range Organics (DRO)	5.045	mg/L	1.0	101	74 157	8.71 2	23
Method: SW8015		· .					
Sample ID: 5ML RB		MBLK			Batch ID: R2243	Analysis Date	2/9/2007 10:01:19 AM
Gasoline Bange Organics (GBO)	ND	ma/l	0.050				2/0/2007 10:01:107.00
Sample ID: 5MI RB		MRIK	0.000		Batch ID: <b>P224</b>		2/12/2007 8-50-22 AM
	ND		0.050		Daten ID. KZZ44	Analysis Date.	2/12/2007 8.39.23 AW
Casoline Range Organics (GRO)	ND	mg/Ļ	0.050		Datab ID. DOOLO	n an	
Sample ID. 2.50G GRO ECS		LUS		· · ·	Batch ID: R2243	Analysis Date:	2/9/2007 12:01:44 PM
Gasoline Range Organics (GRO)	0.5348	mg/L	0.050	102	80 115		
Sample ID: 2.50G GRO LCS		LCS			Batch ID: R2244	0 Analysis Date:	2/12/2007 11:19:44 AM
Gasoline Range Organics (GRO)	0.5266	mg/L	0.050	101	80 115		
Method: SW8021							
ample ID: 5ML RB		MBLK			Batch ID: R2243	Analysis Date:	2/9/2007 10:01:19 AM
Senzene	ND	μg/L	1.0				
Foluene	ND	µg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Sample ID: 5ML RB		MBLK			Batch ID: R2244	0 Analysis Date:	2/12/2007 8:59:23 AM
Benzene	ND	µg/L	1.0				
Toluene	ND	µg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Sample ID: 100NG BTEX LCS		LCS			Batch ID: R2243	31 Analysis Date:	2/9/2007 11:31:36 AN
Benzene	18.22	µg/L	1.0	91.1	85.9 113		
Toluene	19.06	µg/L	1.0	95.3	86.4 113		
Ethylbenzene	19.12	µg/L	1.0	95.6	83.5 118		
Xylenes, Total	57.11	µg/L	2.0	95.2	83.4 122		
Sample ID: 100NG BTEX LCS		LCS			Batch ID: R2244	10 Analysis Date:	2/12/2007 10:49:36 AN
Benzene	19.95	µg/L	1.0	99.8	85.9 113		
Toluene	20.13	µg/L	1.0	101	86.4 113		
Ethylbenzene	19.94	µg/L	1.0	99.7	83.5 118		·
Xylenes, Total	59.87	µg/L	2.0	99.8	83.4 122		

Dua	lifiers:			
E	Value above quantitation mage	11		
E	value above qualitization range	п	Holding times for preparation or analysis exceeded	
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits	Page I
			2/3	

	Sample	e Rece	eipt Ch	ecklist					They are
Client Name SJR				Date and Time	Received:		2	/9/2007	<u> </u>
Work Order Number 0702097	A .			Received by	TLS				
Checklist completed by	lippe		2 Date	-9-07					
Matrix	Carrier name	UPS							
Shipping container/cooler in good condition?		Yes		No 🗔	Not Present				
Custody seals intact on shipping container/coole	r?	Yes		No 🗌	Not Present		ot Shipped		
Custody seals intact on sample bottles?		Yes		No 🗌	N/A				
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 🗌	<i>:</i>				
Sample containers intact?		Yes	$\checkmark$	No 🗌					
Sufficient sample volume for indicated test?		Yes		No 🗌				·	
All samples received within holding time?		Yes	✓	No 🗌					
Water - VOA vials have zero headspace?	No VOA vials sub	mitted		Yes 🗹	No 🗌				
Water - Preservation labels on bottle and cap mathematical second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second	atch?	Yes		No 🗌	N/A 🔽				
Water - pH acceptable upon receipt?		Yes		No 🗔	N/A 🔽				
Container/Temp Blank temperature?			5°	4° C ± 2 Accepta	able				
COMMENTS:				If given sufficient	t time to cool.				
							·		
Client contacted	Date contacted:			Pers	son contacted				_
Contacted by:	Regarding								
Comments:									
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- <u></u>									
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Corrective Action									_
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HALL ENVIRONMENTAL ANALYSIS LABORATORY	AB01 Hawkins NE, Suite D	Tel: 505.345.3975 Fax 505.345.4107				ot (J) 85) 20 <sup>4</sup> )	9iO\266 ., Dq , ., Dq , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04 , ., 04	sedsbs () () () () () () () () () () () () ()	708 bor 708 bor 708 bor 700 80 700 20 81835 700 20 700 2000 20	Metho Metho Metho Pest Pest Pest Pest Pest Pest Pest Pest	TPH ( TPH ( 82310 82310 82870 82870 82870 82870 82870 82870 82870 82870 82870 8270							
QA/ QC Package: Std 🗖 Level 4 🗍	Other:	Project Name:	CAC 2/08/07	Project #:	(Aļu	Project Manager:	Cindy Hi-Lick	Sampler Oof Krades	Sample Temperature:	Preservative + +	Number/Volume H9Cl <sub>2</sub> HNO <sub>3</sub> $(0.707 \text{ BFL})$	4-VOA- Her -1 X						Repetived By: (Signature) Z/G/J6 7 Remarks Received By (Signature)
		Client SAN Juan Rehams	-	Address: # 50 Rel 4990	Bloom Fuld, NM	61460		Phone #: 505-632-4161	Fax #: 505 - 632 - 3711		Date Time Matrix Sample I.D. No.	2.8-07 (25 450 CAC 1EFF						Date: Time: Relinquished By: (Signature) 1308/07 (2011) Date: Relinquished By: (Signature)

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#### COVER LETTER

Monday, February 26, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC Analysis 2-20-07

Dear Cindy Hurtado:

Order No.: 0702230

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 2/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENT:	San Juan Refining			Client Sample	<b>D</b> : GAC	1 Eff				
Lab Order:	0702230			Collection D	ate: 2/20/2	2/20/2007 8:55:00 AM				
Project:	GAC Analysis 2-20-07			Date Receiv	<b>ed:</b> 2/21/2	2007				
Lab ID:	0702230-01			Mat	rix: AQUI	EOUS				
Analyses		Result	PQL (	Jual Units	DF	Date Analyzed				
EPA METHOD	8015B: DIESEL RANGE				·····	Anaiyst: SCC				
Diesel Range C	Organics (DRO)	ND	1.0	mg/L	1	2/23/2007 12:25:39 PM				
Motor Oil Rang	je Organics (MRO)	ND	5.0	mg/L	1	2/23/2007 12:25:39 PM				
Surr: DNOP		118	58-140	%REC	1	2/23/2007 12:25:39 PM				
EPA METHOD	8015B: GASOLINE RANG	E				Analyst: NSB				
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	2/21/2007 11:59:49 AM				
Surr: BFB		104	79.2-121	%REC	1	2/21/2007 11:59:49 AM				
EPA METHOD	8021B: VOLATILES					Analyst: <b>NSB</b>				
Benzene	·	2.0	1:0	µg/L	1	2/21/2007 11:59:49 AM				
Toluene		ND	1.0	μg/L	. 1	2/21/2007 11:59:49 AM				
Ethylbenzene		ND	1.0	µg/Ľ	1	2/21/2007 11:59:49 AM				
Xylenes, Total		ND	3.0	µg/L	1	2/21/2007 11:59:49 AM				
Surr: 4-Bron	nofluorobenzene	88.2	70.2-105	%REC	1.	2/21/2007 11:59:49 AM				

E Value above quantitation range

\*

Qualifiers:

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Value exceeds Maximum Contaminant Level

B Analyte detected in the associated Method Blank

Date: 26-Feb-07

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 1 of 2

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12	~

**CLIENT:** 

**Project:** 

Lab ID:

Lab Order:

#### Hall Environmental Analysis Laboratory, Inc.

San Juan Refining

GAC Analysis 2-20-07

0702230

0702230-02

Date: 26-Feb-07

Client Sample ID: GAC 2 Eff Collection Date: 2/20/2007 9:00:00 AM Date Received: 2/21/2007 Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE		·····				Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0		mg/L	1 1	2/23/2007 1:00:06 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	2/23/2007 1:00:06 PM
Surr: DNOP	121	58-140		%REC	1	2/23/2007 1:00:06 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	2/21/2007 12:30:02 PM
Surr: BFB	107	79.2-121	<i>2</i> -	%REC	1	2/21/2007 12:30:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: <b>NSB</b>
Benzene	ND	1.0		µg/L	1	2/21/2007 12:30:02 PM
Toluene	ND	1.0		µg/L	1	2/21/2007 12:30:02 PM
Ethylbenzene	ND	1.0		µg/L	1	2/21/2007 12:30:02 PM
Xylenes, Total	ND	3.0		µg/L	1	2/21/2007 12:30:02 PM
Surr: 4-Bromofluorobenzene	88.4	70.2-105		%REC	1	2/21/2007 12:30:02 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

}

# QA/QC SUMMARY REPORT

Client: San Juan R Project: GAC Analy	efining ysis 2-20-07						Worl	2 Order: 070223
Analyte	Result	Units	PQL	%Rec	LowLimit H	HighLimit	%RPD RF	PDLimit Qual
Method: SW8015	ar (a)							
Sample ID: MB-12370		MBLK			Batch ID	): 12370	Analysis Date:	2/23/2007 10:43:54 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0					
Sample ID: LCS-12370		LCS	•		Batch ID	): 12370	Analysis Date:	2/23/2007 11:16:51 AM
Diesel Range Organics (DRO)	5.880	mg/L	1.0	118	74	157	-	
Sample ID: LCSD-12370		LCSD			Batch ID	): 12370	Analysis Date:	2/23/2007 11:51:15 AM
Diesel Range Organics (DRO)	5.742	mg/L	1.0	115	74	157	2.39	23
Method: SW8015								· .
Sample ID: 0702230-02A MSD		MSD			Batch ID	): <b>R22553</b>	Analysis Date:	2/21/2007 4:00:33 PM
Gasoline Range Organics (GRO)	0 5044	mall	0.050	101	80	115	177 8	2 30
Sample ID: 5ML REAGENT BL	A	MBLK	0.000		Batch IE	): <b>R22553</b>	Analysis Date:	2/21/2007 7:53:59 AM
Gasoline Bange Organics (GRO)	ND	ma/l	0.050				· · · · · · · · · · · · · · · · · · ·	
Sample ID: 25UG GRO LCS	ND	LCS	0.000		Batch If	) R22553	Analysis Date:	2/21/2007 4:30:44 PM
Casalina Banga Organing (CPO)	0 5069		0.050	101	20	145	, analysis bate.	
Sample ID: 0702230-024 MS	0.5008	MS	0.050	101	ou Batch II	110	Analysis Data:	2/21/2007 2:20:24 DM
	0 5424	mell	0.050	100	Batori IL		Analysis Date.	2/2/12007 5.50.241 1
Gasoline Range Organics (GRO)	0.5134	mg/L	0.050	103	80	115		
Method: SW8021	•							· .
Sample ID: 0702230-01A MSD		MSD			Batch II	D: <b>R22553</b>	Analysis Date:	2/21/2007 2:29:59
Benzene	22.09	µg/L	1.0	100	85.9	113	1.80	27
Toluene	20.12	µg/L	1.0	101	86.4	113	1.98	19
Ethylbenzene	20.26	µg/L	1.0	101	83.5	118	1.76	10
Xylenes, Total	60.96	µg/L	2.0	102	83.4	122	2.04	13
Sample ID: 5ML REAGENT BL	.A	MBLK			Batch II	D: R22553	Analysis Date:	2/21/2007 7:53:59 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0				·	•
Sample ID: 100NG BTEX LCS		LCS			Batch I	D: R22553	Analysis Date:	2/21/2007 3:00:13 PM
Benzene	20.89	µg/L	1.0	104	85.9	113		
Toluene	20.78	µg/L	1.0	104	86.4	113		,
Ethylbenzene	20.89	µg/L	1.0	104	83.5	118		
Xylenes, Total	63.43	µg/L	2.0	106	83.4	122		
Sample ID: 0702230-01A MS		MS			Batch I	D: <b>R22553</b>	Analysis Date:	2/21/2007 2:00:01 PM
Benzene	22.49	µg/L	1.0	102	85.9	113		
Toluene	20.52	µg/L	1.0	103	86.4	113		
Ethylbenzene	20.62	µg/L	1.0	103	83.5	118		
Xylenes, Total	62.22	µg/L	2.0	104	83.4	122	;	
· · · · · · · · · · · · · · · · · · ·								·

· .				
Qua	lifiers:	 		
E	Value above quantitation range	Н	Holding times for preparation or analysis exceeded	
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits	Page I
			3/4	· · ·

Sam	ple Receipt Ch	necklist		
Client Name SJR.		Date and Tim	2/21/200	
Work Order Number 0702230		Received b	oy GLS	
Checklist completed by Signature	2-2 Date	1-07		
Matrix Carrier na	me <u>UPS</u>			
Shipping container/cooler in good condition?	Yes 🔽	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes	No 🗌	N/A	
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 🗔		
Water - VOA vials have zero headspace? No VOA vials	submitted	Yes 🗹	No	
Water - Preservation labels on bottle and cap match?	Yes	No 🗌	N/A 🗹	
Water - pH acceptable upon receipt?	Yes 🗌	No 🗌	N/A 🔽	
Container/Temp Blank temperature?	3°	4° C ± 2 Acce	otable	
COMMENTS:		If given sufficie	ent time to cool.	
	=====			
Client contacted Date contacted	:	P	erson contacted	
Contacted by: Regarding				
Comments:	.,			
Corrective Action				

.

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Alburuseruta Naw Mexico 87109	Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com				or N)	08) s,t	69q2b 	A or P, etals cicides (AO (AO) mi-VO (AO)	(V9) 018 (N9) 018 (F) 018 (F, 019) (F) 019 (V) 100 (V)	1           3           3           4           5           7           1           3									
				(հյւ	10 eni (1221) (1221)	)8) 2'1  ozeð) bi(]\zeð	H9T - (1, 2, 1)	- 381 - 380 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4	DB (Weth bH Weth ITEX + M		X						Hemarks:		
QA/ GC Package: Std 🗖 Level 4 🔲	me:	ANALUSIS 2-20-07		-	anager:	Cindly Hostedo		mperature:	blume Preservative HEAL No.	C C C C C C C C C C C C C C C C C C C	1 X 2						(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	sceived By: (Signature)	
Other Other	Refining Project Ne	, GAC	2 20 Project #	\$ NM 87413	Project M		- 4/Le / Sampler.	391/ Sample Te	Sample I.D. No. Number/	GAC 1 EGG 4-VO.	GAC 2 EFF 4-10.						By: (Signature) R	By: (Signature)	_
CH & IN- 0F- C US	Client: SAN JUAN		Address: #50 Rd 45	Floomfield			Phone #: 505-632-	Fax #: 505 - 632 -	Date Time Matrix	2.20-07 8:55 H20	2-20-07 9:00 H20						Date: Time: Relinquished	Date: Time Relinquished	



#### COVER LETTER

Friday, March 02, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC Analysis- 2/27/07

Dear Cindy Hurtado:

Order No.: 0702367

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 2/28/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 BFax 505.345.4107 www.hallenvironmental.com

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0702367 GAC Analysis- 2/27/07 0702367-01	Client Sample I Collection Da Date Receive Matr	D: GAC te: 2/27/2 ed: 2/28/2 ix: AQUE	GAC 1 Eff 2/27/2007 11:20:00 AM 2/28/2007 AQUEOUS			
Analyses		Result	PQL	Qual Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE	- <del>-</del>		<u>,</u>		Analyst: SCC	
Diesel Range O	rganics (DRO)	ND	1.0	mg/L	1	3/1/2007 3:41:34 PM	
Motor Oil Range	e Organics (MRO)	ND	, 5.0	mg/L	1	3/1/2007 3:41:34 PM	
Surr: DNOP		117	58-140	%REC	1	3/1/2007 3:41:34 PM	
EPA METHOD	8015B: GASOLINE RANGI	Ē				Analyst: NSB	
Gasoline Range	e Organics (GRO)	ND	0.050	mg/L	1	3/1/2007 10:37:27 PM	
Surr: BFB	- · · · ·	111	79.2-121	%REC	1	3/1/2007 10:37:27 PM	
EPA METHOD	8021B: VOLATILES					Analyst: NSB	
Benzene		ND	1.0	µg/L	1	3/1/2007 10:37:27 PM	
Toluene		ND	1.0	µg/L	1	3/1/2007 10:37:27 PM	
Ethylbenzene		ND	1.0	µg/L	1	3/1/2007 10:37:27 PM	
Xylenes, Total		ND	2.0	µg/L	1	3/1/2007 10:37:27 PM	
Surr: 4-Brom	ofluorobenzene	91.7	70.2-105	%REC	1	3/1/2007 10:37:27 PM	

Date: 02-Mar-07

Qualifiers:

\*

- Value exceeds Maximum Contaminant Level
- E Value above quantitation rangeJ Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level RL Reporting Limit

1/4



Date: 02-Mar-07

1

1

3/1/2007 11:07:38 PM

3/1/2007 11:07:38 PM

CLIENT:	San Juan Refining			Client Sample II	D: GAC	2 Eff
Lab Order:	0702367			<b>Collection Dat</b>	e: 2/27/2	2007 11:30:00 AM
Project:	GAC Analysis- 2/27/07			Date Receive	<b>d:</b> 2/28/2	2007
Lab ID:	0702367-02			Matri	x: AQU	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE	·····		· · · · · · · · · · · · · · · · · · ·		Analyst: SCC
Diesel Range C	Drganics (DRO)	ND	1.0	mg/L	1	3/1/2007 4:15:58 PM
Motor Oil Range Organics (MRO)		ND	5.0	mg/L	1	3/1/2007 4:15:58 PM
Surr: DNOP		118	58-140	%REC	1	3/1/2007 4:15:58 PM
EPA METHOD	8015B: GASOLINE RANG	E				Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	3/1/2007 11:07:38 PM
Surr: BFB		114	79.2-121	%REC	1	3/1/2007 11:07:38 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Benzene		ND	1.0	µg/L	1	3/1/2007 11:07:38 PM
Toluene		ND	1.0	µg/L	1	3/1/2007 11:07:38 PM
Ethylbenzene		ND	1.0	µg/L	1	3/1/2007 11:07:38 PM

2.0

70.2-105

µg/L

%REC

ND

94.2

Qualifiers:

Xylenes, Total

Surr: 4-Bromofluorobenzene

\* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

## QA/QC SUMMARY REPORT

Client: San	Juan Refining								
Project: GA	GAC Analysis- 2/27/07					Work	Work Order: 07023		
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RPE	DLimit Qual		
Method: SW8015				•					
Sample ID: MB-12410		MBLK			Batch ID: 1241	0 Analysis Date:	3/1/2007 1:58:25 PM		
Diesel Range Organics (D	ND ND	mg/L	1.0						
Motor Oil Range Organics	s (MRO) ND	mg/L	5.0				ſ		
Sample ID: LCS-12410		LCS			Batch ID: 1241	0 Analysis Date:	3/1/2007 2:32:49 PM		
Diesel Range Organics (E	DRO) 5.603	mg/L	1.0	112	74 157				
Sample ID: LCSD-1241	0	LCSD			Batch ID: 1241	0 Analysis Date:	3/1/2007 3:07:09 PM		
Diesel Range Organics (	DRO) 5.623	mg/L	1.0	112	74 157	0.362 23	3		
Method: SW8015									
Sample ID: 5ML REAG	ENT BLA	MBLK			Batch ID: R2266	64 Analysis Date:	3/1/2007 7:58:58 AM		
Gasoline Range Organics	(GRO) ND	mg/L	0.050						
Sample ID: 2.5UG GRC	LCS	LCS			Batch ID: R2266	64 Analysis Date:	3/2/2007 6:37:59 AM		
Gasoline Range Organics	s (GRO) 0.5380	mg/L	0.050	108	80 115				
Method: SW8021									
Sample ID: RB-II		MBLK			Batch ID: R2266	54 Analysis Date:	3/2/2007 2:07:52 AM		
Benzene	ND	µg/L	1.0				4		
Toluene	ND	µg/L	. 1.0						
Ethylbenzene	ND	µg/L	1.0				_		
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTI	EX LCS-II	LCS			Batch ID: R226	64 Analysis Date:	3/2/2007 2:37:53		
Benzene	20.24	µg/L	1.0	101	85.9 113		*		
Toluene	20.31	µg/L	1.0	102	86.4 113				
Ethylbenzene	20.41	μg/L	1.0	102	83.5 118				
Xylenes, Total	62.18	µg/L	2.0	104	83.4 122				

Qualifiers:

- Е Value above quantitation range
- Analyte detected below quantitation limits J
- R RPD outside accepted recovery limits

- Holding times for preparation or analysis exceeded Н
  - Not Detected at the Reporting Limit
  - Spike recovery outside accepted recovery limits

3/4

ND

S

	Sample	Rece	eipt Ch	ecklist			
Client Name SJR				Date and Time	Received:		2/28/2007
Work Order Number 0702367				Received by	TLS		
		.	Date	<u>638,67</u>			
Matrix	Carrier name	UPS					
Shipping container/cooler in good condition?		Yes		No	Not Present		
Custody seals intact on shipping container/coole	r?	Yes		No 🗌	Not Present		Not Shipped
Custody seals intact on sample bottles?		Yes		No 🗌	N/A	$\checkmark$	
Chain of custody present?		Yes	$\checkmark$	No			
Chain of custody signed when relinquished and	received?	Yes	$\checkmark$	No 🗌			
Chain of custody agrees with sample labels?		Yes	$\checkmark$	No 🗌			
Samples in proper container/bottle?		Yes		No 🗌			
Sample containers intact?		Yes	<b>&gt;</b>	No 🗔			
Sufficient sample volume for indicated test?		Yes		No 🗌			
All samples received within holding time?		Yes		No 🗌			
Water - VOA vials have zero headspace?	No VOA vials sub	mitted		Yes 🗹	No		
Water - Preservation labels on bottle and cap m	atch?	Yes		No 🗌	N/A 🔽		
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🔽		
Container/Temp Blank temperature?			3°	4° C ± 2 Accepta	able		
COMMENTS:				If given sufficien	t time to cool.		
	Data contacted:			Der	on contented		
				Pen	son contacteu		
Contacted by:	Regarding						
Comments:							·····
					-		•
					······································		
			·		u		
Corrective Action							
<b></b>	·						
345.4107	Air Bubbles or Headspace (Y or N)						
---------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------				
VVIRONMENT SIS LABORAT ins NE, Suite D e, New Mexico 871 5.3975 Fax 505. vironmental.com	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )        8081 Pesticides / PCB's (8082)        8260B (VOA)        8270 (Semi-VOA)						
HALL Ef ANALYS 4901 Hawk Albuquerqu Tel. 505.34 www.hallen www.hallen	EDB (Method 504.1)        EDC (Method 8021)        8310 (PNA or PAH)        RCRA 8 Metals						
	TPH (Method 418.1)      BTEX + MTBE + TPH (Gasoline Only)      FTEX + MTBE + TPH (Gasoline Only)		Remarks:				
QA / QC Package:    Btd I    Level 4 I    Other:    Project Name:    Project #:	Project Manager: Project Manager: Sample Hundry How-tack Sample Memberature Number Volume Number Volume HgCl <sub>2</sub> HNO <sub>3</sub> HzL U - VOA U - VOA V - VOA V	2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Received By: (Signature) 2/28-L27 CMMA A Signature) 3/28-L27 (Received By()(Signature)				
ANN-OF-CUSTODY RECORD	Diborn full NM ne #505-633-416 #: 505-633-416 hte Time Matrix Sample I.D. No. 67   120 A Ho CACIEF	A 1308 F CAREFT	Time: Relinquished By: (Signature)				



### COVER LETTER

Tuesday, March 20, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 3-13-07

Dear Cindy Hurtado:

Order No.: 0703192

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 3/14/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

<u> </u>	<b>J</b>		······································			
CLIENT:	San Juan Refining			Client Sample ID	: 1-Inle	.t
Lab Order:	0703192			<b>Collection Date</b>	: 3/13/2	2007 9:35:00 AM
Project:	GAC 3-13-07			Date Received	: 3/14/2	2007
Lab ID:	0703192-01			Matrix	AQU	EOUS
Analyses	· · · ·	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	3/15/2007 5:59:35 PM
Motor Oil Rang	je Organics (MRO)	ND	5.0	mg/L	1	3/15/2007 5:59:35 PM
Surr: DNOP		122	58-140	%REC	1	3/15/2007 5:59:35 PM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: <b>NSB</b>
Gasoline Rang	e Organics (GRO)	12	0.50	mg/L	10	3/15/2007 2:43:21 PM
Surr: BFB	· · · ·	110	79.2-121	%REC	10	3/15/2007 2:43:21 PM
EPA METHOD	8021B: VOLATILES					Analyst: <b>NSB</b>
Benzene		230	10	µg/L	10	3/15/2007 2:43:21 PM
Toluene		39	10	µg/L	10	3/15/2007 2:43:21 PM
Ethylbenzene		860	10	µg/L	10	3/15/2007 2:43:21 PM
Xylenes, Total		2900	40	µg/L	20	3/16/2007 11:22:50 AM
Surr: 4-Bror	nofluorobenzene	86.6	70.2-105	%REC	10	3/15/2007 2:43:21 PM

Qualifiers:

\* Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits 1/6
- B Analyte detected in the associated Method Blank

Date: 20-Mar-07

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

	· · · · · · · · · · · · · · · · · · ·						
CLIENT:	San Juan Refining			С	lient Sample ID:	Eff-1	<u></u>
Lab Order:	0703192				<b>Collection Date:</b>	3/13/2	2007 9:30:00 AM
Project:	GAC 3-13-07				Date Received:	3/14/2	2007
Lab ID:	0703192-02				Matrix:	AQU	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC
Diesel Range C	organics (DRO)	ND	1.0		mg/L	1	3/15/2007 6:34:35 PM
Motor Oil Range	e Organics (MRO)	ND	5.0		mg/L	1	3/15/2007 6:34:35 PM
Surr: DNOP		123	58-140		%REC	1	3/15/2007 6:34:35 PM
EPA METHOD	8015B: GASOLINE RAN	GE			·		Analyst: NSB
Gasoline Range	e Organics (GRO)	ND	0.050		mg/L	1	3/15/2007 3:43:24 PM
Surr: BFB		108	79.2-121		%REC	1	3/15/2007 3:43:24 PM
EPA METHOD	8021B: VOLATILES						Analyst: NSB
Benzene		2.7	1.0		µg/L	1	3/15/2007 3:43:24 PM
Toluene	· ,	ND	1.0		µg/L	1	3/15/2007 3:43:24 PM
Ethylbenzene		ND	1.0		µg/L	1	3/15/2007 3:43:24 PM
Xylenes, Total		ND	2.0		µg/L	1	3/15/2007 3:43:24 PM
Surr: 4-Brom	ofluorobenzene	85.8	70.2-105		%REC	1	3/15/2007 3:43:24 PM

**Date:** 20-Mar-07

Qualifiers:

\* Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits -2/6
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



CLIENT:	San Juan Refining			C	lient Sa	mple ID:	Eff-2	······································
Lab Order:	0703192			1	Collect	ion Date:	3/13/2	2007 9:25:00 AM
Project:	GAC 3-13-07				Date I	Received:	3/14/2	2007
Lab ID:	0703192-03					Matrix:	AQU	EOUS
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE							Analyst: SCC
Diesel Range (	Organics (DRO)	ND	1.0		mg/L		1	3/15/2007 7:09:17 PM
Motor Oil Rang	ge Organics (MRO)	ND	5.0		mg/L		1	3/15/2007 7:09:17 PM
Surr: DNOP		131	58-140		%REC		1	3/15/2007 7:09:17 PM
EPA METHOD	8015B: GASOLINE RAN	GE						Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050		mg/L		1	3/15/2007 4:13:29 PM
Surr: BFB		110	79.2-121		%REC		1	3/15/2007 4:13:29 PM
EPA METHOD	8021B: VOLATILES							Analyst: NSB
Benzene		ND	1.0		µg/L		1	3/15/2007 4:13:29 PM
Toluene		ND .	1.0		µg/L		1	3/15/2007 4:13:29 PM
Ethylbenzene		ND	1.0		µg/L		1	3/15/2007 4:13:29 PM
Xylenes, Total	5	ND	2.0		µg/L		1	3/15/2007 4:13:29 PM
Surr: 4-Bror	nofluorobenzene	86.8	70.2-105		%REC		1	3/15/2007 4:13:29 PM

Date: 20-Mar-07

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits 3/6
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

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¥.		
	roie	et:

San Juan Refining GAC 3-13-07

Work Order: 0703192

Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RPD	Limit Qual
Method: SW8015 Sample ID: MB-12514		MBLK			Batch ID: 12514	Analysis Date:	3/15/2007 3:39:45 PM
Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Sample ID: LCS-12514	ND ND	mg/L mg/L LCS	1.0 5.0		Batch ID: 12514	Analysis Date:	3/15/2007 4:14:41 PM
Diesel Range Organics (DRO) Sample ID: LCSD-12514	5.808	mg/L LCSD	1.0	116	74 157 Batch ID: <b>12514</b>	Analysis Date:	3/15/2007 4:49:41 PM
Diesel Range Organics (DRO)	6.117	mg/L	1.0	122	74 157	5.18 23	·
Method: SW8015 Sample ID: 0703192-02A MSD		MSD			Batch ID: R22853	Analysis Date:	3/15/2007 5:13:46 PM.
Gasoline Range Organics (GRO) Sample ID: 5ML REAGENT BLA	0.5084	mg/L MBLK	0.050	92.3	80 115 Batch ID: <b>R22853</b>	0.592 8.3 Analysis Date:	9 3/15/2007 7:25:08 AM
Gasoline Range Organics (GRO) Sample ID: 5ML REAGENT BLA	ND	mg/L MBLK	0.050		Batch ID: R22868	Analysis Date:	3/16/2007 9:49:32 AM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	ND	mg/L LCS	0.050		Batch ID: R22853	Analysis Date:	3/15/2007 5:43:56 PM
Gasoline Range Organics (GRO)	0.5016	mg/L LCS	0.050	100	80 115 Batch ID: <b>R22868</b>	Analysis Date:	3/16/2007 10:01:18 PM
soline Range Organics (GRO) ample ID: 2.5UG GRO LCSD	0.5152	mg/L LCSD	0.050	99.6	80 115 Batch ID: <b>R22868</b>	Analysis Date:	3/16/2007 10:31:24 PM
Gasoline Range Organics (GRO) Sample ID: 0703192-02A MS	0.4586	mg/L <i>M</i> S	0.050	88.2	80 115 Batch ID: <b>R22853</b>	11.6 15 Analysis Date:	3/15/2007 4:43:37 PM
Gasoline Range Organics (GRO)	0.5054	mg/L	0.050	91.7	80 115	-	

#### Jualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S

 $4 / 6^{\text{ecovery outside accepted recovery limits}}$ 

Client: Project: San Juan Refining GAC 3-13-07

Work Order: 0703192

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDL	imit Qual
Method: SW8021	,								
Sample ID: 0703192-03A MSD		MSD			Batch	ID: R22853	Analysis Da	te:	3/15/2007 7:14:08 PN
Benzene	19.57	µg/L	1.0	97.8	85.9	113	0.102	27	
Toluene	20.01	µg/L	1.0	100	86.4	113	0.409	19	
Ethylbenzene	20.17	µg/L	1.0	101	83.5	118	0.338	10	
Xylenes, Total	59.76	µg/L	2.0	99.6	83.4	122	0.936	13	
Sample ID: 5ML REAGENT BLA		MBLK			Batch	ID: R22853	Analysis Da	ite:	3/15/2007 7:25:08 AM
Benzene	ND	µg/L	1.0			н - С			
Toluene	ND	μg/L	1.0						
Ethylbenzene	ND	μg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 5ML REAGENT BLA		MBLK			Batch	ID: R22868	Analysis Da	ate:	3/16/2007 9:49:32 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0			,			
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R22853	Analysis Da	ate:	3/15/2007 7:44:14 PI
Benzene	20.17	µg/L	1.0	101	85.9	113			
Toluene	20.54	µg/L	1.0	103	86.4	113			
Ethylbenzene	20.61	µg/L	1.0	103	83.5	118			
Xylenes, Total	61.78	µg/L	2.0	103	83.4	122			
Sample ID: 100NG BTEX LCS	• •	LCS		,	Batch	ID: R22868	Analysis Da	ate:	3/16/2007 7:59:16 P
Benzene	19.76	µg/Ľ	1.0	98.8	85.9	113			
Toluene	20.11	μg/L	1.0	101	86.4	113			
Ethylbenzene	20.25	µg/L	1.0	101	83.5	118			
Xylenes, Total	60.50	µg/L	2.0	101	83.4	122	*		
Sample ID: 100NG BTEX LCSD		LCSD			Batch	ID: R22868	Analysis D	ate:	3/16/2007 8:30:58 P
Benzene	19.38	µg/L	1.0	96.9	85.9	113	1.92	27	
Toluene	19.67	μg/L	1.0	· 98.4	86.4	113	2.22	19	
Ethylbenzene	19.88	µg/∟	1.0	99.4	83.5	118	1.88	10	
Xylenes, Total	59.09	μg/L	2.0	98.5	83.4	122	2,36	13	
Sample ID: 0703192-03A MS		MS			Batch	n ID: R22853	Analysis D	ate:	3/15/2007 6:44:11 F
Benzene	19.59	µg/L	1.0	98.0	85.9	113			
Toluene	20.09	µg/L	1.0	100	86.4	113			
Ethylbenzene	20.10	μg/L	1.0	101	83.5	118			
Xvienes, Total	60.32	µg/L	2.0	101	83.4	122			

- Qualifiers:
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
  - Not Detected at the Reporting Limit

ND

S

 $\overline{5}$  /  $\overline{6}^{\text{recovery outside accepted recovery limits}}$ 

3.0

	Sample Receipt Che	ecklist		
Client Name SJR		Date and Tim	ne Received:	3/14/2007
Work Order Number 0703192		Received b	by TLS	
Checklist completed by Signature	3/14   Date	67		
Matrix Carr	rier name <u>UPS</u>			
Shipping container/cooler in good condition?	Yes 🔽	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🗹	No	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes	No 🗋	N/A	
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 🗌		
Water - VOA vials have zero headspace? No VOA	A vials submitted	Yes 🗹	No	
Water - Preservation labels on bottle and cap match?	Yes	No 🗌	N/A 🗹	
Water - pH acceptable upon receipt?	Yes	No 🗌	N/A 🗹	
Container/Temp Blank temperature?	3°	4° C ± 2 Acce	otable	
COMMENTS:		If given sufficie	ent time to cool.	
Client contacted Date con:	tacted:	Pe	erson contacted	
Contacted by: Regardin	g			
Comments				
		a.		
Corrective Action				
	· · · · · · · · · · · · · · · · · · ·			
		-,	:	

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tai Fore 245 975 6256 345 4107	lei, ouo. 440. 497.0 - Fax ouo. 440.4107 www.hallenvironmental.com	AVANYSIS REQUEST		۵ (۲ OL N ۱ OL N ۱ OL N ۱ OL N ۱ OL N	69q2b9cc 7) <sup>3</sup> ' NO <sup>5</sup> ' E VH) )51)	A or P, etals C(, NO DA) mi-VO Mi-VO Mi-VO	EDC (Met 8310 (PN 8310 (FV 8081 Pes 8081 Pes 82608 (V 82608 (V))))))))))))))))))))))))))))))))))))										)
			[λ υ[	(1508) J enilose (leseiO\;	94'1) 8'1) 12B (C <sup>98</sup> 15B (C <sup>98</sup> 15B (C <sup>98</sup> <b>9</b>	,08 bon 08 bon 14 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 15 bon 1	EDB (Wef 15H (Wef BLEX + W BLEX + <b>W</b>	××	$\star$	××					Remarks:		
QA/QC Package: Std 🔲 Level 4 🗍 Other: Prniert Name	CAC W/W SAC	Project #:	1 QUARTER = 200	Project Manager:	Sampler Bot Sunder	Sample Temperature:	Preservative      HEAL No.        Number/Volume      H9Cl2      HNO3      HCI      OTC3      Q2	4-VOA X 1	4-Voh × 2	4-VOA X 3					Received By: (Signature) 3/1/1/07	Received By (29gnature)	)
	HE AN JUAN ZetiNING	Address Bloom Size (d, NM 87413			Phone #: 505-632 - 41 6	Fax #: 505-632-39 //	Date Time Matrix Sample I.D. No.	3-13-27 9:35 Hao 1-inlet	1 7,30 4.0 64-1	1 9:25 HO EA-2-					Date: Time: Relinquished By: (Signature)	Date: Time Relinquished By: (Signature)	-



#### COVER LETTER

Wednesday, March 28, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 3-21-07

Dear Cindy Hurtado:

Order No.: 0703335

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 3/22/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0703335 GAC 3-21-07 0703335-01			Client Sampl Collection I Date Rece Ma	e ID: EFF- Date: 3/21/ ived: 3/22/ atrix: AQU	1 2007 8:55:00 AM 2007 EOUS
Analyses	· · · ·	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE			······		Analyst: SCC
Diesel Range (	Drganics (DRO)	1.2	1.0	mg/L	1	3/27/2007 2:10:39 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	3/27/2007 2:10:39 PM
Surr: DNOP		123	58-140	%REC	1	3/27/2007 2:10:39 PM
EPA METHOD	8015B: GASOLINE RAN	GE ,	• •			Analyst: NSB
Gasoline Rang	e Organics (GRO)	· 0.051	. 0.050	mg/L	1	3/23/2007 1:08:47 AM
Surr: BFB		112	79.2-121	%REC	1	3/23/2007 1:08:47 AM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Benzene		3.4	1.0	µg/L	1	3/23/2007 1:08:47 AM
Toluene		ND	1.0	µg/L	1	3/23/2007 1:08:47 AM
Ethylbenzene		ND	1.0	µg/L	1	3/23/2007 1:08:47 AM
Xylenes, Total		ND	2.0	µg/L	1	3/23/2007 1:08:47 AM
Surr: 4-Bron	nofluorobenzene	88.6	70.2-105	%REC	1	3/23/2007 1:08:47 AM

Date: 28-Mar-07

Value exceeds Maximum Contaminant Level В Analyte detected in the associated Method Blank \* Е Value above quantitation range Н Holding times for preparation or analysis exceeded Analyte detected below quantitation limits MCL Maximum Contaminant Level J ND Not Detected at the Reporting Limit RL Reporting Limit S Spike recovery outside accepted recovery limits

Qualifiers:

1/3

Page 1 of 1



San Juan Refining GAC 3-21-07

Work Order: 0703335

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD R	PDLimit Qual
Method: SW8015	- •· · ·				···· ··· ··· ··· ·			
Sample ID: MB-12590		MBLK			Batch II	J: 12590	Analysis Date:	: 3/2//2007 11:53:27 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0		<b>-</b>			
Sample ID: LCS-12590		LCS			Batch II	D: <b>12590</b>	Analysis Date:	: 3/27/2007 1:01:56 PM
Diesel Range Organics (DRO)	4.535	mg/L	1.0	90.7	74	157	·.	
Sample ID: LCSD-12590		LCSD			Batch II	D: <b>12590</b>	Analysis Date:	: 3/27/2007 1:36:17 PM
Diesel Range Organics (DRO)	5.484	mg/L	1.0	110	74	157	18.9	23
Method: SW8015					κ.			
Sample ID: 0703335-01A MSD		MSD			Batch I	D: R22935	Analysis Date	: 3/23/2007 2:08:59 AM
Gasoline Range Organics (GRO)	0.4996	mg/L	0.050	89.7	80	115	0.758	8.39
Sample ID: 5ML REAGENT BLA		MBLK			Batch I	D: R22935	Analysis Date	: 3/22/2007 7:57:21 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch I	D: R22935	Analysis Date	: 3/23/2007 4:09:12 AM
Gasoline Range Organics (GRO)	0.4128	ma/L	0.050	82.6	80	115		
Sample ID: 0703335-01A MS		MS .			Batch I	D: R22935	Analysis Date	: 3/23/2007 1:38:49 AM
Gasoline Range Organics (GRO)	0.5034	mg/L	0.050	90.4	80	115		
Method: SW8021						. <u></u>		
mple ID: 0703335-01A MSD		MSD			Batch I	D: R22935	Analysis Date	e: 3/23/2007 2:08:59 AM
	9 2 9 0	uo/l	1.0	105	85.9	113	0.921	27
foluene	41.43	ug/L	1.0	103	86.4	113	0.261	19
Ethylbenzene	8.016	μg/L	1.0	101	83.5	118	0.448	10
Xylenes, Total	47.07	µg/L	2.0	102	83.4	122	0.0722	13
Sample ID: 5ML REAGENT BLA		MBLK			Batch I	D: R22935	Analysis Date	e: 3/22/2007 7:57:21 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: 100NG BTEX LCS		LCS			Batch I	D: R22935	Analysis Date	e: 3/23/2007 2:38:58 AM
Benzene	20.19	µg/L	1.0	101	85.9	113		
Toluene	20.63	µg/L	1.0	103	86.4	113		
Ethylbenzene	20.52	µg/L	1.0	103	83.5	118		
Xylenes, Total	61.53	µg/L	2.0	103	83.4	122		
Sample ID: 0703335-01A MS		MS			Batch	ID: R22935	Analysis Date	e: 3/23/2007 1:38:49 AN
Benzene	9.376	µg/L	1.0	107	85.9	113		
Toluene	41.32	µg/L	1.0	102	86.4	113		
Ethylbenzene	8.052	µg/L	1.0	102	83.5	118		
Xylenes, Total	47.10	μg/L	2.0	102	83.4	122		

Juali	fiers:				
E	Value above quantitation range	Н	Holding times for preparation or analysis exceeded		
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	n.	· ,
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits $2/3$	P	age I

	Sample Receipt Che	cklist	
Client Name SJR		Date and Time Received:	3/22/2007
Work Order Number 0703335		Received by TLS	S .
	3-2 Date	2-07	
Matrix Can	ier name <u>Client drop-of</u> l		
Shipping container/cooler in good condition?	Yes 🗹	No Not Prese	ent 🗌
Custody seals intact on shipping container/cooler?	Yes	No 🗌 Not Prese	ent 🗌 Not Shipped 🗹
Custody seals intact on sample bottles?	Yes	No 🗌 N/A	
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	и
Sufficient sample volume for indicated test?	Yes 🗹	No	
All samples received within holding time?	Yes 🗹	No 🗔	
Water - VOA vials have zero headspace? No VOA	A vials submitted $\Box$	Yes 🗹 No	
Water - Preservation labels on bottle and cap match?	Yes 🗌	No 🗌 N/A	
Water - pH acceptable upon receipt?	Yes	No 🗌 🛛 N/A	
Container/Temp Blank temperature?	6°	4° C ± 2 Acceptable	
COMMENTS:		If given sufficient time to co	pol.
·			
· .	• .		
Client contacted Date con	tacted:	Person contac	ted
Contacted by: Regardin	g		·
Comments:		·	
· · · · · · · · · · · · · · · · · · ·			
		·	
Corrective Action		:	

3/3

AL Pary	345.4107			эсе (7 ог <u>Л</u>	edspea	e or He	ir Bubble										
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<b>HAL</b> <b>AN</b> 4901 4901	Tel. 5( www.	E-			/H)	7 or P4	310 (bN/	3	<b>_</b>					 			
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				(LSO8) 📽			tex + 🖌							 			Rema
UA/ UU Packagu: Std 🔲 Level 4 🗍 Other:	Project Name:	Project #:		Project Wanager:	Sampler Box Kradon	Sample Temperature: 71, 3 Co	Number/Volume	CSSCNIN 124 (21061) DV11-7									Received By: (Signature) 3 2 2 10-7 . 0.00, 0 Received By: (Signature)
eustody record.	JUAN REFINING	CR 4990	Gield, NM B7413		- 632 - 4/6/	632 - 3911	Matrix Sample I.D. No.	Hall FEF- 1									Relinquished By: (Signature)
N O	NAS	#50	mag		Sos.	505-	Ilme	, 8:55 8:55	<u>,</u>								Time: ?,'35 Time:
S H S	Client:	Address:	2		Phone #	Fax #:	Date	3-21-07									<u>Date:</u> 3-21-07 Date:

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### COVER LETTER

Wednesday, April 11, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 4/03/07

Dear Cindy Hurtado:

Order No.: 0704053

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 4/4/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0704053 GAC 4/03/07 0704053-01			Clic	ent Sample ID: collection Date: Date Received: Matrix:	Eff #1 4/3/20 4/4/20 AQUE	07 2:05:00 PM 07 EOUS
Analyses		Result	PQL	Qual U	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					· · · ·	Analyst: SCC
Diesel Range O	rganics (DRO)	ND	1.0	r	ng/L	1	4/4/2007 10:58:34 PM
Motor Oil Range	e Organics (MRO)	ND	5.0	r	ng/L	1	4/4/2007 10:58:34 PM
Surr: DNOP		114	58-140	0	%REC	1	4/4/2007 10:58:34 PM
EPA METHOD	8015B: GASOLINE RAN	IGE					Analyst: LMM
Gasoline Range	e Organics (GRO)	0.071	0.050	r	ng/L	1	4/7/2007 9:20:29 PM
Surr. BFB		114	79.2-121	c	%REC	1	4/7/2007 9:20:29 PM
EPA METHOD	8021B: VOLATILES						Analyst: LMM
Benzene		14	1.0	ļ	ug/L	1	4/7/2007 9:20:29 PM
Toluene		ND	1.0	}	ug/L	1	4/7/2007 9:20:29 PM
Ethylbenzene		ND	1.0	1	ug/L	1	4/7/2007 9:20:29 PM
Xylenes, Total	· · · ·	ND	2.0		ug/L	1	4/7/2007 9:20:29 PM
Surr: 4-Brom	ofluorobenzene	89.7	70.2-105		%REC	1	4/7/2007 9:20:29 PM

Date: 11-Apr-07

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

Е Value above quantitation range

Analyte detected below quantitation limits J

- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits S
  - 1/5
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 2





Hall Envir	conmental Analys	is Labora	ntory, In	c. Date	: 11-Apr-	07
CLIENT:	San Juan Refining			Client Sample ID	: Eff #2	
Lab Order:	0704053			Collection Date	: 4/3/200	7 2:15:00 PM
Project:	GAC 4/03/07			Date Received	: 4/4/200	7
Lab ID:	0704053-02			Matrix	: AQUEC	DUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Organics (DRO)	NĎ	1.0	mg/L	1	4/4/2007 11:32:43 PM
Motor Oil Rang	ge Organics (MRO)	ND	5.0	mg/L	1	4/4/2007 11:32:43 PM
Surr: DNOP		126	58-140	%REC	1	4/4/2007 11:32:43 PM
EPA METHOD	8015B: GASOLINE RAN	GE .				Analyst: LMM
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	4/6/2007 10:29:23 PM
Surr: BFB		109	79.2-121	%REC	1	4/6/2007 10:29:23 PM
EPA METHOD	8021B: VOLATILES					Analyst: LMM
Benzene		ND	1.0	µg/L	1	4/6/2007 10:29:23 PM
Toluene		ND	1.0	µg/L	1	4/6/2007 10:29:23 PM
Ethylbenzene		ND	1.0	µg/L	1	4/6/2007 10:29:23 PM
Xylenes, Total		ND	2.0	µg/L	1	4/6/2007 10:29:23 PM
Surr: 4-Bron	nofluorobenzene	86.8	70.2-105	%REC	1	4/6/2007 10:29:23 PM



Ε Valué above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- Spike recovery outside accepted recovery limits S 2/5
- Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

В

Client: Sa Project: G	n Juan Refin: AC 4/03/07	ing						Work	Order: 070405
Analyte	· · · · · · · · · · · · · · · · · · ·	Result	Units	PQL	%Rec	LowLimit Hi	ghLimit	%RPD RPI	DLimit Qual
Method: SW8015 Sample ID: MB-12656	5		MBLK			Batch ID:	12656	Analysis Date:	4/4/2007 8:40:44 PM
Diesel Range Organics Motor Oil Range Organi Sample ID: LCS-1265	(DRO) ics (MRO) i <b>6</b>	ND ND	mg/L mg/L LCS	1.0 5.0		Batch ID:	12656	Analysis Date:	4/4/2007 9:15:09 PM
Diesel Range Organics Sample ID: LCSD-126	(DRO) 656	5.371	mg/L LCSD	1.0	107	74 Batch ID:	157 <b>12656</b>	Analysis Date:	4/4/2007 9:49:34 PM
Method: SW8015 Sample ID: 0704053-0	02A MSD		MSD			Batch ID:	R23139	Analysis Date:	4/6/2007 11:29:22 PM
Gasoline Range Organi Sample ID: 5ML REA	ics (GRO) I <b>GENT BLA</b>	0.4268	mg/L <i>MBLK</i>	0.050	82.6	80 · Batch ID:	115 R23139	0.188 8. Analysis Date:	39 4/6/2007 9:30:14 AM
Gasoline Range Organi Sample ID: 5ML REA	ics (GRO) GENT BLA	ND	mg/L <i>MBLK</i>	0.050		Batch ID:	R23144	Analysis Date:	4/7/2007 3:11:02 PM
Gasoline Range Organ Sample ID: 2.5UG G	ics (GRO) RO LCS	ND .	mg/L LCS	0.050		Batch ID:	R23139	Analysis Date:	4/6/2007 11:42:13 AM
Gasoline Range Organ Sample ID: 2.5UG GI	ics (GRO) RO LCS	0.4978	mg/L LCS	0.050	99.6	80 Batch ID:	115 <b>R23144</b>	Analysis Date:	4/7/2007 5:11:52 PM
Gasoline Range Organ Sample ID: 0704053-	ics (GRO) <sup>,</sup> 02A MS	0.4782	mg/L MS	0.050	95.6	80 Batch ID:	115 <b>R23139</b>	Analysis Date:	4/6/2007 10:59:21
Gasoline Range Organ	iics (GRO)	0.4260	mg/L	0.050	82.4	80	115		· · ·

Qualifiers:

- Е Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

S

3/5 recovery outside accepted recovery limits

Page I

lient: niect<sup>.</sup> San Juan Refining GAC 4/03/07

<b>Project:</b> GAC 4/03/07							We	ork Ord	er: 0704053
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimi	it Qual
Method: SW8021					an i a an initian initia				
Sample ID: 0704053-02A MSD		MSD			Batch II	D: R23139	Analysis Dat	e: 4/6	/2007 11:29:22 PN
Benzene	5.442	µg/L	1.0	109	85.9	113	0.738	27	
Toluene	38.99	µg/L	1.0	100	86.4	113	1.02	19	
Ethylbenzene	7.522	µg/L	1.0	100	83.5	118	0.240	10	
Xylenes, Total	44.23	µg/L	2.0	111	83.4	122	1.38	13	
Sample ID: 5ML REAGENT BLA		MBLK			Batch II	D: R23139	Analysis Dat	e: 4/	/6/2007 9:30:14 AN
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 5ML REAGENT BLA		MBLK			Batch II	D: <b>R23144</b>	Analysis Dat	e: 4/	/7/2007 3:11:02 PN
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		LCS			Batch II	D: R23139	Analysis Dat	e: 4/6	6/2007 11:12:13 AN
Benzene	18.88	μg/L	1.0	94.4	85.9	113			
Toluene	19.42	µg/L	1.0	97.1	86.4	113			
Ethylbenzene	19.64	μg/L	1.0	98.2	83.5	118			
Cylenes, Total	59.10	µg/L	2.0	98.5	83.4	122			
Sample ID: 100NG BTEX LCS		LCS			Batch I	D: R23144	Analysis Dat	:e: 4	/7/2007 4:41:35 PM
Benzene	19.18	µg/L	1.0	95.9	85.9	113			
Toluene	19.60	µg/L	1.0	98.0	86.4	113			
Ethylbenzene	19.77	µg/L	1.0	98.9	83.5	118			
Xylenes, Total	59.26	µg/L	2.0	98.8	83.4	122			
Sample ID: 0704053-02A MS		MS			Batch I	D: R23139	Analysis Da	te: 4/6	6/2007 10:59:21 PI
Benzene	5.402	µg/L	.1.0	108	85.9	113			
Toluene	38.60	μg/L	1.0	99.0	86.4	113			
Ethylbenzene	7.504	µg/L	1.0	100	83.5	118			
Xylenes, Total	43.62	µg/L	2.0	109	83.4	122			

Qualifiers:

- Ε Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

S

spike recovery outside accepted recovery limits  $4 \ / \ 5$ 

	Sample	Rece	eipt Che	ecklist			
Client Name SJR				Date and Time	Received:	4/4/2007	
Work Order Number 0704053	1			Received by	GLS		
Checklist completed by Signature	ypi		Date	-4-07	• • •		
- / Matrix	Carrier name	UPS					
Shipping container/cooler in good condition?		Yes		No 🗌	Not Present		
Custody seals intact on shipping container/cooler	?	Yes		No 🗌	Not Present 🗹	Not Shipped	
Custody seals intact on sample bottles?		Yes		No 🗌	N/A		
Chain of custody present?		Yes	$\checkmark$	No 🗌			
Chain of custody signed when relinquished and r	eceived?	Yes		No 🗔	. · · ·		
Chain of custody agrees with sample labels?	,	Yes		No 🗌			
Samples in proper container/bottle?		Yes		No 🗔			
Sample containers intact?		Yes	$\checkmark$	No			
Sufficient sample volume for indicated test?		Yes	$\checkmark$	No 🗌			
All samples received within holding time?		Yes		No 🗌			•
Water - VOA vials have zero headspace?	No VOA vials sub	mitted		Yes 🗹	No 🗍		
Water - Preservation labels on bottle and cap ma	atch?	Yes		No 🗌	N/A		
Water - pH acceptable upon receipt?	v -	Yes		No 🗌	N/A		
Container/Temp Blank temperature?			4°	4° C ± 2 Accepta	able	· .	
COMMENTS:	· ·			If given sufficient	t time to cool.		
					I		
						· · · · · · · · · · · · · · · · · · ·	
Client contacted	Date contacted:			Pers	son contacted		
Contacted by:	Regarding						
	aanene seenen i						
Comments:	• 19 7 Michiels 4						
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HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505,345,3975 Fax 505,345,4107 www.hallenvironmental.com		thod 418.1) thod 504.1) thod 504.1) VA or PAH) sticides / PCB's (805 vOA) sticides / PCB's (805 vOA) theadspace (Y o es or Headspace (Y o	FPH (Me EDB (Me BDC (Me BDC (Me BDC (Me BDC (Me BDC (Me BDC (Sc BDC (Sc) (Sc BDC (Sc) (Sc) (Sc) (Sc) (Sc) (Sc) (Sc) (Sc)				
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BA/ GC Packayu.	Project #:	Empler Hurtzdo, Sample Temperature: ( Dob Matow Sample Temperature: ( Dob Matow	Number/Volume Preservative HEAL No. HgCl <sub>2</sub> HNO <sub>3</sub> O7O40S3	4-VOA- HCU - 2			Reserved By: (Fignature) H-4-00 Received By: (Signature) H-CJA
CHAIN-OF-CUSTODV RECORD Client: SAN Shan Refund	Address: # 50 Ropd 4990 Dompold, NM	Phone #: 50 5- 632-4161 Fax #: 505- 632-3911	Date Time Matrix Sample I.D. No.	40367 205~ HZO EFF # 2			4 Date Time: Relinquished By: (Signature) Date: Time: A. Relinquished By: (Signature)



### COVER LETTER

Monday, April 23, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 4/16/07

Order No.: 0704251

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 4/18/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Hall Envir	onmental Analys	C. Date	: 23-Ap	pr-07		
CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0704251 GAC 4/16/07 0704251-01			Client Sample ID Collection Date Date Received Matrix	: GAC : 4/16/2 : 4/18/2 : AQU	Eff #1 2007 11:00:00 AM 2007 EOUS
Analyses	,	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD & Diesel Range O Motor. Oil Range Surr: DNOP	B015B: DIESEL RANGE rganics (DRO) Organics (MRO)	ND ND 121	1.0 5.0 58-140	mg/L mg/L %REC	1 1 1	Analyst: SCC 4/19/2007 9:47:19 PM 4/19/2007 9:47:19 PM 4/19/2007 9:47:19 PM
EPA METHOD	B015B: GASOLINE RAN	GE	0.050	~~~~~ (l		Analyst: NSB
Surr: BFB	Organics (GRO)	112	79.2-121	%REC	1 1 :	4/21/2007 1:54:28 AM 4/21/2007 1:54:28 AM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Benzene		28	1.0	µg/L	1	4/21/2007 1:54:28 AM
Toluene	, ·	ND	1.0	µg/L	1	4/21/2007 1:54:28 AM
Ethylbenzene	· ·	ND	1.0	µg/L	1	4/21/2007 1:54:28 AM
Xylenes, Total		ND.	2.0	µg/L	1	4/21/2007 1:54:28 AM
Surr: 4-Brom	ofluorobenzene	89.5	70.2-105	%REC	1	4/21/2007 1:54:28 AM

Qualifiers: \* Value

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits 1

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded .
- MCL Maximum Containinant Level

RL Reporting Limit

1/4

Page 1 of 2

21	

Date: 23-Apr-07

CLIENT:	San Juan Refining			Client San	nple ID: GA	AC Eff #2
Lab Order:	0704251			Collectio	on Date: 4/1	6/2007 11:05:00 AM
Project:	GAC 4/16/07			Date R	eceived: 4/1	8/2007
Lab ID:	0704251-02				Matrix: AQ	UEOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE		·····			Analyst: SCC
Diesel Range (	Drganics (DRO)	ND	1.0	mg/L	1	4/19/2007 10:21:47 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	4/19/2007 10:21:47 PM
Surr: DNOP		123	58-140	%REC	1	4/19/2007 10:21:47 PM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	4/21/2007 2:24:22 AM
Surr: BFB		111	79.2-121	%REC	1	4/21/2007 2:24:22 AM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Benzene		ND	1.0	µg/L	1	4/21/2007 2:24:22 AM
Toluene		ND	1.0	μg/L	1	4/21/2007 2:24:22 AM
Ethylbenzene		ND	1.0	µg/L	1	4/21/2007 2:24:22 AM
Xylenes, Total		ND	2.0	hð\r	. 1	4/21/2007 2:24:22 AM
Surr: 4-Brom	nofluorobenzene	87.6	70.2-105	%REC	1	4/21/2007 2:24:22 AM



Qualifiers:

\* Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits  $\gamma$
- B Analyte detected in the associated Method Blank -
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 2 of 2

Client: Sa Project: G	an Juan Refir AC 4/16/07	ning					• .	Work	Order: 0704251
Analyte		Result	Units	PQL	%Rec	LowLimit H	ighLimit	%RPD RP	DLimit Qual
Method: SW8015				a na ann an an an ann an Anna an Anna an Anna an Anna an Anna an Anna an Anna an Anna an Anna an Anna an Anna a			ne late and a late of		
Sample ID: MB-1276	5		MBLK			Batch ID:	12765	Analysis Date:	4/19/2007 8:04:08 PM
Diesel Range Organics	(DRO)	ND	mg/L	1.0					
Motor Oil Range Organ	nics (MRO)	ND	mg/L	5.0			*		
Sample ID: LCS-1276	65		LCS			Batch ID:	12765	Analysis Date:	4/19/2007 8:38:31 PM
Diesel Range Organics	(DRO)	4,783	mg/L	1.0	95.7	74	157		
Sample ID: LCSD-12	765		LCSD			Batch ID:	12765	Analysis Date:	4/19/2007 9:12:55 PM
Diesel Range Organics	(DRO)	5.149	mg/L	1.0	103	• 74	157	7.37	23
Method: SW8015									
Sample ID: 5ml rb-II	24		MBLK			Batch ID:	R23317	Analysis Date:	4/20/2007 8:23:53 PM
Gasoline Range Organ	nics (GRO)	ND	ma/l	0.050					
Sample ID: 2.5UG G	RO LCS-II	ND	LCS	0.000		Batch ID:	R23317	Analysis Date:	4/21/2007 6:09:47 PM
Gasoline Range Organ	nics (GRO)	0.4208	ma/L	0:050	84.2	80	115		
Mothod: SW/8021									······································
Sample ID: 5ML RB-	11		MBLK			Batch ID	R23317	Analysis Date:	4/20/2007 8:23:53 PM
Renzene		ND	10/	10					
Toluene			µg/L	1.0			•		
Ethylbenzerie		ND	ug/l	1.0					
Xvlenes, Total	6 - T	ND	- uo/L	2.0					
Sample ID: 5ML RB	-[]]		MBLK	2.0		Batch ID	: R23317	Analysis Date:	4/21/2007 10:35:58 A
Renzene		ND	ua/l	10				,	
Toluene		ND	μα/i	. 10					
Ethylbenzene		ND	ug/L	1.0					
Xvlenes, Total		ND	ua/L	2.0					
Sample ID: 100NG E	BTEX LCS-II		LCS			Batch ID	R23317	Analysis Date:	4/21/2007 2:54:23 AM
Benzene		18.80	µg/L	1.0	94.0	85.9	113		
Toluene		19.18	µg/L	1.0	95.9	86.4	113		
Ethylbenzene		19.30	µg/L	. 1.0	96.5	83.5	118	1	
Xylenes, Total		57.44	µg/L	2.0	95.7	83.4	122		
Sample ID: 100NG I	BTEX LCS-III		LCS			Batch IE	): R23317	Analysis Date:	4/21/2007 4:39:25 PM
Benzene		18.62	ua/L	1.0	93.1	85.9	113	• •	
Toluene		19.04	µg/L	1.0	95.2	86.4	113		
Ethylbenzene		19.13	µg/L	1.0	95.6	83.5	118		
Xylenes, Total		56.54	µg/L	2.0	94.2	83.4	122		
Sample ID: 100NG I	BTEX LCSD-I		LCSD			Batch IE	): <b>R23317</b>	Analysis Date:	4/21/2007 5:09:27 PM
Benzene		18.92	µg/L	1.0	94.6	85.9	113	1.56	27
Toluene		19.27	μg/L	1.0	96.4	86.4	113	1.18	19
Ethylbenzene	,	. 19.29.	μg/L	1.0	96.5	83.5	118	,0.864	10
Xylenes, Total		57.53	µg/L	2.0	95.9	83.4	122	1.73	13

- Qualifiers:
- Ε Value above quantitation range
- J Analyte detected below quantitation limits
- RPD outside accepted recovery limits R

- Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - Snike recovery outside accepted recovery limits 3/4

Page 1

Н

S

Hall Environmental Analysis Laboratory, Inc. Sample Receipt Checklist 4/18/2007 Client Name SJR Date and Time Received: Work Order Number 0704251 Received by TLS App. 18,07 anya Shomi Checklist completed by UPS Carrier name Matrix Yes 🗹 No 🗌 Not Present Shipping container/cooler in good condition? Yes 🗹 No 🗌 Not Present Not Shipped Custody seals intact on shipping container/cooler? Yes 🗌 No 🗌 N/A ~ Custody seals intact on sample bottles? Yes 🗹 No Chain of custody present? Yes 🗹 No 🗌 Chain of custody signed when relinquished and received? Yes 🗹 No 🗌 Chain of custody agrees with sample labels? No Yes 🗹 Samples in proper container/bottle? No 🗌 Yes 🗹 Sample containers intact? Yes 🔽 No 🗌 Sufficient sample volume for indicated test? Yes 🗹 No 🗌 All samples received within holding time? Yes 🗹 No VOA vials submitted No 🗌 Water - VOA vials have zero headspace? Water - Preservation labels on bottle and cap match? Yes 🗌 No 🗌 N/A 🗸

Container/Temp Blank temperature? COMMENTS:

Water - pH acceptable upon receipt?

Client contacted	Date contacted:	. Person contacted	
Contacted by:	Regarding		
Comments:			
		· · · · · · · · · · · · · · · · · · ·	
Corrective Action		· · · · · · · · · · · · · · · · · · ·	·

Yes 🗌

1°

No

4° C ± 2 Acceptable

If given sufficient time to cool.

N/A

Hall Environmental Analysis Laboratory 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com	(l)esei(D,es6) 82 f 08 bortaem HqT (1, 81 A bortaem HqT) (1, 81 A bortaem) HqT (1, 05 bortaem) (1, 08 08 07 1) (Matrice 108 07 1) (Matrice 108 07 1) (Matrice 108 02, 100, 100, 100, 100, 100, 100, 100,		
ad/ GC Package: Std □ Level 4 □ Other: Project Name, CMC 4/16/07 Project #:	BTEX + Manager: Sampler: BL Sampler: BL Number/Volume HEAL No. Number/Volume HEAL No. HEAL  3-VoA KL VILTEY 3-VoA HL Z X Bereived By: (Signature) U 1/6 (Signature)		
CHAIN-OF-CUSTODY RECORD Client: San Jun Refuring	<i>B</i> 2 4/3 Phone #: SDS- 633-4/16/ Fax #: 5DS- 633-4/16/ Date Time Matrix Sample I.D. No.	4/10/07 11/Am 420 6AC EFF # 1 HILU/07 1105An 420 6AC EFF # 2 ABC EFF # 2 HILU/07 1105An 420 6AC EFF # 2 HILU/07 8/2An Ac 6AC EFF # 2 HILU/07 8/2An Ac 6AC EFF # 2 ABC FFF # 1 Ac 6AC EFF # 2	



### COVER LETTER

Thursday, May 03, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC

Dear Cindy Hurtado:

Order No.: 0704400

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 4/26/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0704400 GAC 0704400-01			Cl	ient Sample ID: Collection Date: Date Received: Matrix:	Eff-1 4/25/20 4/26/20 AQUE	007 11:10:00 AM 007 OUS
Analyses	· · · · · · · · · · · · · · · · · · ·	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC
Diesel Range (	Drganics (DRO)	ND	1.0		mg/L	1	5/1/2007 11:26:30 AM
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L	1	5/1/2007 11:26:30 AM
Surr: DNOP		123	58-140		%REC	1	5/1/2007 11:26:30 AM
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB
Gasoline Rang	e Organics (GRO)	0.074	0.050		mg/L	1	4/26/2007 11:28:59 PM
Surr: BFB		114	79.2-121		%REC	1	4/26/2007 11:28:59 PM
EPA METHOD	8021B: VOLATILES						Analyst: NSB
Benzene		14	1.0		µg/L	1	4/26/2007 11:28:59 PM
Toluene		ND	1.0		µg/L	1	4/26/2007 11:28:59 PM
Ethylbenzene		ND	1.0		µg/L	1	4/26/2007 11:28:59 PM
Xylenes, Total		ND	2.0		µg/L	1	4/26/2007 11:28:59 PM
Surr: 4-Bron	nofluorobenzene	89.1	70.2-105		%REC	1	4/26/2007 11:28:59 PM

Qualifiers:

- Value exceeds Maximum Contaminant Level
  E Value above quantitation range
- E Value above quantitation rangeJ Analyte detected below quantitation limits

5 / Malyte detected below quantitation m

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

Date: 03-May-07

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 2

1/4

Hall Envir	e: 03-M	03-May-07				
CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0704400 GAC 0704400-02		······	Client Sample II Collection Dat Date Received Matri	D: Eff-2 e: 4/25/2 d: 4/26/2 x: AQU	2007 11:00:00 AM 2007 EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	5/1/2007 12:01:11 PM
Motor Oil Range Organics (MRO)		ND	5.0	mg/L	1	5/1/2007 12:01:11 PM
Surr: DNOP		117	58-140	%REC	1	5/1/2007 12:01:11 PM
EPA METHOD	8015B: GASOLINE RANGE	Ξ				Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	4/26/2007 11:58:57 PM
Surr: BFB		113	79.2-121	%REC	1	4/26/2007 11:58:57 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Benzene		ND	1.0	μg/L	1	4/26/2007 11:58:57 PM
Toluene		ND	1.0	µg/L	1	4/26/2007 11:58:57 PM
Ethylbenzene		ND	1.0	µg/L	1	4/26/2007 11:58:57 PM
Xylenes, Total	,	ND	2.0	µg/L	1	4/26/2007 11:58:57 PM
Surr: 4-Bron	nofluorobenzene	88.0	70.2-105	%REC	1	4/26/2007 11:58:57 PM



Е Value above quantitation range

- J Analyte detected below quantitation limits ND
- Not Detected at the Reporting Limit S
  - Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Client: San Juan Refi	ning							
Project: GAC						·	Worl	k Order: 070440
Analyte	Result	Units	PQL	%Rec	LowLimit Hi	ghLimit	%RPD RF	PDLimit Qual
Method: SW8015								
Sample ID: MB-12841		MBLK			Batch ID:	12841	Analysis Date:	5/1/2007 9:43:01 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0			а. С		
Sample ID: LCS-12841		LCS			Batch ID:	12841	Analysis Date:	5/1/2007 10:17:23 AM
Diesel Range Organics (DRO)	5.138	mg/L	1.0	103	74	157		
Sample ID: LCSD-12841		LCSD			Batch ID:	12841	Analysis Date:	5/1/2007 10:40:36 AM
Diesel Range Organics (DRO)	5.250 <sup>-</sup>	mg/L	1.0	105	74	157	2.16	23
Method: SW8015								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R23375	Analysis Date:	4/26/2007 9:26:05 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R23375	Analysis Date:	4/26/2007 8:58:36 PM
Gasoline Range Organics (GRO)	0.4986	mg/L	0.050	94.4	80	115		
Method: SW8021							×	
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R23375	Analysis Date:	4/26/2007 9:26:05 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: 100NG BTEX LCS		LCS	÷		Batch ID:	R23375	Analysis Date:	4/26/2007 6:58:00
Benzene	18.93	µg/L	1.0	94.6	85.9	113		
Toluene	19.52	µg/L	1.0	97.6	86.4	113		
Ethylbenzene	19.78	µg/L	1.0	98.9	83.5	118		
Xylenes, Total	59.08	µg/L	2.0	98.5	83.4	122		

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

Н

ND

S

Spike recovery outside accepted recovery limits  $3 \ / \ 4$ 

Page I

1

	Sample R	Receipt C	hecklist			
Client Name SJR			Date and Time	Received:		4/26/2007
Work Order Number 0704400			Received by	TLS		
Checklist completed by Jony Shor	<b>`</b>	ADR Dat	26,07			
Matrix	Carrier name	UPS				
Shipping container/cooler in good condition?		Yes 🗹		Not Present		
Custody seals intact on shipping container/cooler?		Yes 🗹	No 🗌	Not Present		Not Shipped
Custody seals intact on sample bottles?		Yes 🗌	No 🗌	N/A		
Chain of custody present?		Yes 🗹	No 🗌			
Chain of custody signed when relinquished and rece	ived?	Yes 🗹	No 🗌			
Chain of custody agrees with sample labels?		Yes 🗹	No			4.
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 🗌			
Water - VOA vials have zero headspace? N	o VOA vials submit	tted	Yes 🗹	No 🗔		
Water - Preservation labels on bottle and cap match	?	Yes 🗌	No	N/A 🔽		
Water - pH acceptable upon receipt?		Yes 🗌	No 🗌	N/A 🗹		
Container/Temp Blank temperature?	•	<b>4°</b> .	4° C ± 2 Accepta	able		
COMMENTS:			If given sufficient	t time to cool.		
	· ····· ···· ···· ···· ···· ····					
Client contacted Da	te contacted:		Pers	son contacted	••••	
Contacted by: Re	garding					
Comments:						
Corrective Action						
· · · · · · · · · · · · · · · · · · ·				0		
						and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second sec

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HALL ENVIRONMENTAL ANALYSIS LABORATOR 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345 www.haltenvironmental.com	ANALYSIS REQUEST	(lese)() (28082) (28082)	0V) es / PCB es / PCB 8021) 504 1) 504 1) 1031 (025 1031 (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025 10) (025) (025 10) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025) (025)	8 bor thod 4 thod 7 thod 7 thod 8 thod 8 thod 9 thod 1 thod  TPH Meth TPH (Met EDB (Met 8310 (PM Anions (F, 8081 Pes 8081 Pes 8081 Pes 8081 Pes 8250B (Se	K								•	
	ιįλ)	6asoline Or	) Hdi +	1981V	BTEX + N	X	X		 		 		Remarks:	
GA / GC Package: Std □ Level 4 □ Dther: Project Name:	Project #:	Project Manager:	Sampler: Bob KAKo	Sample lemperature:	Number/Volume HgC1 <sub>2</sub> HN0 <sub>3</sub> HC1 D7 C4HD5	SUOA X I	3-10A × 2						Received By: (Signature) 4/24 10 7	(Redeived By: (Sighature)
GUETODY RECORD	Rd 4890 Geld NM 87413		-632-4161	633 - 3911	Matrix Sample I.D. No.	H20 EFE-1	1420 Eft-2				-		Relinquished By: (Signature)	Relinquished By: (Signature)
<b>GHAIN-OF.</b> Client: SAU	Address:#50		Phone #: 505-	Fax # 505-6	Date	4-25-07 11:10	00:11 20-55-h						Date: Time: 4-25-07 11:45	Date: Time



#### COVER LETTER

Thursday, May 10, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC

Order No.: 0705063

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 5/3/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Pax 505.345.4107 www.hallenvironmental.com

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0705063 GAC 0705063-01			Client Sample Collection D Date Receiv Mat	ID: GAC-B ate: 5/2/200 ved: 5/3/200 rrix: AQUE	7 8:33:00 AM 7 DUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	5/9/2007 10:45:27 AM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1.	5/9/2007 10:45:27 AM
Surr: DNOP		120	58-140	%REC	1	5/9/2007 10:45:27 AM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	· 1	5/4/2007 12:30:39 PM
Surr: BFB		115	79.2-121	%REC	. 1	5/4/2007 12:30:39 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Benzene		ND	1.0	µg/L	1	5/4/2007 12:30:39 PM
Toluene		ND	1.0	µg/L	1	5/4/2007 12:30:39 PM
Ethylbenzene		ND	1.0	µg/L	1	5/4/2007 12:30:39 PM
Xylenes, Total		ND	2.0	μg/L	1	5/4/2007 12:30:39 PM
Surr: 4-Bror	nofluorobenzene	88.5	70.2-105	%REC	1.	5/4/2007 12:30:39 PM

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Quanners:	ers:
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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

Date: 10-May-07

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 1
## QA/QC SUMMARY REPORT

roject: GAC	ining						We	ork O	order: 0705063
Analyte	Result	Units	PQL	%Rec	LowLimit Hi	ghLimit	%RPD I	RPDL	imit Qual
Method: SW8015									
Sample ID: MB-12887		MBLK			Batch (D:	12887	Analysis Date	9:	5/9/2007 9:03:08 AN
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-12887		LCS			Batch ID:	12887	Analysis Date	e:	5/9/2007 9:37:14 AN
Diesel Range Organics (DRO)	5.077	mg/L	1.0	102	74	157			
Sample ID: LCSD-12887		LCSD			Batch ID:	12887	Analysis Date	e:	5/9/2007 10:11:19 AN
Diesel Range Organics (DRO)	4.826	mg/L	1.0	96.5	74	157	5.08	23	·····
Method: SW8015									
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R23473	Analysis Date	e:	5/4/2007 8:54:18 AN
Gasoline Range Organics (GRO)	ND	mg/L	0.050				•		
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R23473	Analysis Date	e:	5/4/2007 6:32:01 PM
Gasoline Range Organics (GRO)	0.4776	ma/l	0.050	92.2	80.	115			
Sample ID: 2.5UG GRO LCSD		LCSD		54.E	Batch ID:	R23473	Analysis Dat	e:	5/4/2007 7:02:09 Pt
Gasoline Range Organics (GRO)	0.4738	mg/L	0.050	91.4	80	115	0.799	8.39	,
Nethed: CN//2024						· · · · · · · · · · · · · · · · · · ·			
Method: SW8021		MDLK			Potch ID:	<b>D</b> 22472	Applucic Dat		E14/2007 0.54.19 AL
-		WIDLN			Balun ID.	R20473	Analysis Dat	е.	5/4/2007 0.54.18 A
Senzene	ND.	µg/L	1.0						
the difference of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second sec	ND	µg/L	1.0						
	ND	µg/L	1.0						, 1*
Somple ID: 100NG RTEX LCS	ND	µg/L LCS	2.0		Potch ID:	P22472	Apolycic Dot	0.	514/2007 1-20-50 D
Sample ID. TOUNG BILL LCS	40.00	200		<u> </u>	Balon ID.	1120413	Analysis Dat	с.	31412001 1.30.301
Benzene	18.60	µg/L	1.0	93.0	85.9	113			
l oluene	19.31	µg/L	1.0	96.5	86.4	113			
Ethylbenzene Vedenze Tatal	19.67	µg/L	1.0	98.3	83.5	118			
Sample ID: 100NG RTEX LCSD	58.34	µg/L	2.0	97.2	Batch ID:	122	Apolycic Dot	0	51412007 2:00:51 P
Sample ID. TUUNG BIEA LUSD	10.04				Bailin ID.	NZ3473		.5.	JI4/2007 2.00.31 F
Benzene	18.64	µg/L	1.0	93.2	85.9	1.13	0.226	27-	
I Oluene	19.27	µg/L	1.0	96.4	86.4	113	0.187	19	
	19.57	µg/L	1.0	97.8	03.0	100	0.342	10	
Ayienes, rutai	00.14	μy/L	∠.0	90.9	00.4	122	0.545	13	

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits 2/3

Hall Environmental Analysis Labo	oratory, Inc.								
	Sample F	Rece	ipt Chei	cklist				· (	
Client Name SJR				Date and Tim	e Received:		5/3/20	07	·
Work Order Number 0705063				Received b	y TLS				
Checklist completed by Jong Checklist completed by Gignature			Mau	13,0-	)				
Matrix	Carrier name	<u>UPS</u>							
Shipping container/cooler in good condition?		Yes		No 🗌	Not Present				
Custody seals intact on shipping container/cooler	>	Yes		No 🗌	Not Present		Not Shipped		
Custody seals intact on sample bottles?		Yes		No 🗌	N/A				
Chain of custody present?		Yes	$\checkmark$	No 🗌					
Chain of custody signed when relinquished and re	ceived?	Yes		No 🗌					
Chain of custody agrees with sample labels?		Yes	$\checkmark$	No 🗌					
Samples in proper container/bottle?		Yes		No 🗌			••••		
Sample containers intact?		Yes	$\checkmark$	No 🗌					
Sufficient sample volume for indicated test?		Yes		No 🗍			.*		
All samples received within holding time?		Yes		No 🗔					Ċ
Water - VOA vials have zero headspace?	No VOA vials subm	itted		Yes 🗹	No 🗌				
Water - Preservation labels on bottle and cap ma	tch?	Yes		No 🗌	N/A 🔽				
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🔽				
Container/Temp Blank temperature?		.1	4°	4° C ± 2 Acceµ	otable ,				
COMMENTS				If given sufficie	ent time to cool.				
	· · ·					ŕ.			
	· · · · · · · · · · · · · · · · · · ·				· 				-
							· .		
Client contacted	Date contacted:			P	erson contacted	w			
Contacted by:	Regarding								
Comments:									
				······································			· · · · · · · · · · · · · · · · · · ·		
	· · · · · · · · · · · · · · · · · · ·		······································	· · ·	· · · · · · · · · · · · · · · · · · ·		, , , , <u>, , , , , , , , , , , , , , , ,</u>		
				•	۱ <u>.</u>				
Corrective Action				•					
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HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com	(1) 2000 (2000 (2000) 2000 (2000) 2000 (2000) 2000 (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000) (2000)		
	<ul> <li>BTEX + MTBE - TMD's (Gasoline Only)</li> <li>BTEX + MTBE + TPH (Gasoline Only)</li> <li>TPH Method 8015B (Gasoline Only)</li> </ul>		
Dther: Btd D Level 4 D Other: Project Mame: Project #:	Project Manager: Sampler Jack Mun Rud & Sample Temperature: Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> H/C) COCUC3	Regeived By: (Signature) 5[3]() 1	Heceived By: (biggature)
LAN REFINING	8/20-4/6/ Nr 87413 632-4/6/ 832-39/1 Metrix Sample I.D. No.	P H20 (YAC-B Petitinguished By: (Signature) VCoTed Dy: (Signature)	Helinquished by: Usignature)
CHAN-OF Client: SAN	Phone #: 55-6 Fax #: 555-6	5-2-07 8:33 Date: Time: 5-2-67 8:50	Uate:

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#### COVER LETTER

Thursday, May 17, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 5/9/07

Order No.: 0705154

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 5/11/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENT:	San Juan Refining			C	Client Sample	ID: GAC-	В
Lab Order:	0705154				Collection D	ate: 5/9/20	007 1:45:00 PM
Project:	GAC 5/9/07				Date Receiv	ved: 5/11/2	2007
Lab ID:	0705154-01				Mat	rix: AQUI	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE		<u>.</u>				Analyst: SCC
Diesel Range (	Organics (DRO)	ND	1.0		mg/L	1 -	5/15/2007 7:05:38 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L .	1	5/15/2007 7:05:38 PM
Surr: DNOP		117	58-140		%REC	1	5/15/2007 7:05:38 PM
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050		.mg/L	1	5/14/2007 2:58:26 PM
Surr: BFB		121	79.2-121	S	%REC	<sup>`</sup> 1	5/14/2007 2:58:26 PM
EPA METHOD	8021B: VOLATILES				x		Analyst: NSB
Benzene		ND	1.0		µg/L	1	5/14/2007 2:58:26 PM
Toluene		ND	1.0		µg/L	1	5/14/2007 2:58:26 PM
Ethylbenzene		ND	1.0		µg/L	1	5/14/2007 2:58:26 PM
Xylenes, Total		ND	2.0		µg/L	1	5/14/2007 2:58:26 PM
Surr: 4-Bron	nofluorobenzene	92.7	70.2-105		%REC	1	5/14/2007 2:58:26 PM

Date: 17-May-07

\*

Value exceeds Maximum Contaminant Level

E · Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits 1/3
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit



# QA/QC SUMMARY REPORT

nt:
oject:

San Juan Refining GAC 5/9/07

Work Order: 0705154

Analyte	Result	Units	PQL	%Rec	LowLimit H	lighLimit	%RPD R	PDLimit Qual
Method: SW8015 Sample ID: MB-12932		MBLK			Batch ID	12932	Analysis Date	: 5/15/2007 3:04:39 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0		Detek ID	40000	Analysis Date	
Diagol Papao Organico (DPO)	4 9 1 0	203	1.0	06.0	Daton ID	157	Analysis Dale	5/15/2007 3:39:15 PW
Sample ID: LCSD-12932	4.010	LCSD	1,0	90.2	Batch ID	: <b>12932</b>	Analysis Date	: 5/15/2007 4:13:40 PM
Diesel Range Organics (DRO)	4.860	mg/L	1.0	97.2	74	157	1.03	23
Method: SW8015								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID	: R23590	Analysis Date	: 5/14/2007 8:19:39 AM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	ND	mg/L LCS	0.050		Batch ID	: R23590	Analysis Date	: 5/14/2007 5:04:15 PM
Gasoline Range Organics (GRO)	0.4702	mg/L	0.050	91.1	80	115		
Sample ID: 2.5UG GRO LCSD		LCSD			Batch ID	: R23590	Analysis Date	: 5/14/2007 5:34:20 PM
Gasoline Range Organics (GRO)	0.4792	mg/L	0.050	92.9	80	115	1.90	8.39
Method: SW8021								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID	: R23590	Analysis Date	5/14/2007 8:19:39 AM
nzene	ND	µg/L	1.0					
oluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: 100NG BTEX LCS 0		LCS			Batch ID	: R23590	Analysis Date	e: 5/14/2007 9:50:01 AM
Benzene	19.25	µg/L	1.0	96.2	85.9	113		
Toluene	19.55	µg/L	1.0	97.7	86.4	113		
Ethylbenzene	19.66	µg/L	1.0	98.3	83.5	118		
Xylenes, Total	58.63	µg/L	2.0	97.7	83.4	122		
Sample ID: 100NG BTEX LCS		LCS			Batch IC	): <b>R23590</b>	Analysis Date	e: 5/14/2007 3:58:46 PM
Benzene	19.65	µg/L	1.0	98.2	85.9	113		
Toluene	19.76	µg/L	1.0	98.8	86.4	113		
Ethylbenzene	20.01	µg/L	1.0	100	83.5	118		
Xylenes, Total	59.06	µg/L	2.0	98.4	83.4	122		
Sample ID: 100NG BTEX LCSD		LCSD			Batch IC	): R23590	Analysis Date	e: 5/14/2007 4:31:21 PM
Benzene	19.56	µg/L	1.0	97.8	85.9	113	0.449	27
Toluene	19.69	µg/L	1.0	98.4	86.4	113	0.385	19
Ethylbenzene	19.80	µg/L	1.0	99.0	83.5	118	1.04	10
Xylenes, Total	58.82	µg/L	2.0	98.0	83.4	122	0.414	13

- , e, i
  - Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

S

Snike recovery outside accepted recovery limits 2/3

	Sample F	Receipt Che	cklist		
Client Name SJR			Date and Time	Received:	5/11/2007
Work Order Number 0705154			Received by	TLS	
Checklist completed by January SL		May	11,07		
Matrix	Carrier name	Greyhound	•		
Shipping container/cooler in good condition?		Yes 🗹	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?		Yes 🗹	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?		Yes 🗌	No	N/A	
Chain of custody present?		Yes 🗹	No 🗌		
Chain of custody signed when relinquished and rece	ived?	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 🗌		
Water - VOA vials have zero headspace?	lo VOA vials submi	itted	Yes 🗹	No	
Water - Preservation labels on bottle and cap match	1?	Yes	No 🗌	N/A	
Water - pH acceptable upon receipt?		Yes	No	N/A	
Container/Temp Blank temperature?		8°	4° C ± 2 Accepta	able	
COMMENTS:			If given sufficien	t time to cool.	
				; 	
Client contacted Da	ate contacted:		Per	son contacted	
Contacted by: Re	egarding			· .	
Comments:					
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Corrective Action					
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QA/ GC Package:       Ba/ GC Package:       Std I       Level 4 I       Other:       Project Name:       Project #:	Project Manager: Sampler: - TBS & KRAK 2.	Number/Volume Hestrvative HEAL No. HgCl <sub>2</sub> HNO <sub>3</sub> HCL OTOSTSY	3-VOA X 1				Received By: (Signature) 5/11/67 MMU ON 1000 1000 1052
CUSTODY RECORD AN RECINING	7:eld, NM 87413 -632 - 4/61 632 - 3911	Matrix Sample I.D. No.	HOD GAC - TS				Relinquished By: (Signature) Coto A A Coto Relinquished By: (Signature)
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<b>CHA</b> Client: S Address:	Phone #:	Date	5-9-07				S-9-07 Date:



#### COVER LETTER

Wednesday, May 23, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC- 5/15/07

Dear Cindy Hurtado:

Order No.: 0705220

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 5/16/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0705220 GAC- 5/15/07 0705220-01			Client Sample ID: Collection Date: Date Received: Matrix:	GAC- 5/15/2 5/16/2 AQUI	B 2007 12:15:00 PM 2007 EOUS
Analyses		Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range C	Organics (DRO)	ND	1.0	mg/L	1	5/22/2007 8:50:51 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	5/22/2007 8:50:51 PM
Surr: DNOP		118	58-140	%REC	1	5/22/2007 8:50:51 PM
EPA METHOD	8015B: GASOLINE RANG	E		•		Analyst: NSB
Gasoline Range	e Organics (GRO)	ND	0.050	mg/L	. 1	5/16/2007 8:34:41 PM
Surr: BFB		109	79.2-121	%REC	1	5/16/2007 8:34:41 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Benzene		ND	1.0	µg/L	1.	5/16/2007 8:34:41 PM
Toluene	· .	ND	1.0	µg/L	1.	5/16/2007 8:34:41 PM
Ethylbenzene		ND	1.0	µg/L	1	5/16/2007 8:34:41 PM
Xylenes, Total		ND	2.0	µg/L	1	5/16/2007 8:34:41 PM
Surr: 4-Brom	nofluorobenzene	84.3	70.2-105	%REC	1	5/16/2007 8:34:41 PM

\_\_\_

Date: 23-May-07

Qualifiers:

\*

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range.
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit
- 1/3

В

Page 1 of 1

### **QA/QC SUMMARY REPORT**

							wo	rk Order: (	
Analyte	Result	Units	PQL	%Rec	LowLimit H	lighLimit	%RPD F	RPDLimit Qua	
Method: SW8015									-
Sample ID: MB-13003		MBLK			Batch ID:	13003	Analysis Date	: 5/22/2007	6:32:11 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-13003		LCS			Batch ID:	13003	Analysis Date	: 5/22/2007	7:06:50 PM
Diesel Range Organics (DRO)	4.973	mg/L	1.0	99.5	74	157			
Sample ID: LCSD-13003		LCSD			Batch ID:	13003	Analysis Date	5/22/2007	7:41:33 PM
Diesel Range Organics (DRO)	5.046	mg/L	1.0	101	74	157	1.47	23	
Method: SW8015									
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R23622	Analysis Date	5/16/2007	8:18:09 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R23622	Analysis Date	: 5/16/2007	7:34:35 PM
Gasoline Range Organics (GRO)	0.4916	ma/l	0.050	95.2	80	115			
Sample ID: 2.5UG GRO LCSD	0.1010	LCSD	0.000	00.2	Batch ID:	R23622	Analysis Date	5/16/2007	8:04:40 PM
Gasoline Range Organics (GRO)	0.4758	mg/L	0.050	92.1	80	115	3.27	8.39	
Method: SW8021									
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID	R23622	Analysis Date	e: 5/16/2007	8:18:09 AM
Benzene	ND	μg/L	1.0						
pluene	ND	μg/L	1.0						
thylbenzene	ND	µg/L	1.0						
, Cylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		LCS			Batch ID	R23622	Analysis Date	e: 5/16/2007	6:34:27 PN
Benzene	19.52	µg/L	1.0	97.6	85.9	113			
Toluene	19.54	µg/L	1.0	97.7	86.4	113			
Ethyibenzene	19.86	µg/L	1.0	99.3	83.5	118			
Xylenes, Total	58.81	µg/L	2.0	98.0	83.4	122			
Sample ID: 100NG BTEX LCSD		LCSD			Batch ID	: R23622	Analysis Date	e: 5/16/2007	7:04:37 PN
Benzene	19.07	µg/L	1.0	95.3	85.9	113	2.35	27	
Toluene	19.40	µg/L	1.0	97.0	86.4	113	0.729	19	
Ethylbenzene	19.52	µg/L	1.0	97.6	83.5	118	1.71	10	
Xylenes, Total	58.09	µg/L	2.0	96.8	83.4	122	1.23	13	

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - Spike recovery outside accepted recovery limits
    - 2/3

S

Page 1

	Sample	Receipt Cl	hecklist			· · (
Client Name SJR			Date and Ti	ime Received:		5/16/2007
Work Order Number 0705220			Received	by TLS		
Checklist completed by		Mai	116,07	1, et al. 1000 - 100		
Matrix	Carrier name	UPS				
Shipping container/cooler in good condition?		Yes 🗹	No 🗌	Not Present		
Custody seals intact on shipping container/cooler	2	Yes 🗹	No 🗌	Not Present	□ Not Shipp	ed 🛛 🗌
Custody seals intact on sample bottles?		Yes 🗌	No 🗌	N/A		
Chain of custody present?		Yes 🗹	No 🗌	. *		
Chain of custody signed when relinquished and re	eceived?	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 🗌		· .	
Water - VOA vials have zero headspace?	No VOA vials sub	mitted	Yes 🗹	No		
Water - Preservation labels on bottle and cap ma	tch?	Yes	No 🗌	N/A 🗹		
Water - pH acceptable upon receipt?		Yes 🗌	No	N/A 🔽		а. -
Container/Temp Blank temperature?		2°	4° C ± 2 Acc	eptable		
COMMENTS:			If given suffic	cient time to cool.		
				!		
	· · · · · · · · · · · · · · · · · · ·					
			•	i *		
Client contacted	Date contacted:			Person contacted		<u>.</u> :
Contacted by:	Regarding					
Comments:	· · ·					
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Corrective Action						
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,				*		

No.

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com	EDC (Method 8021) 8310 (PVA or PAH) Anions (F, Cl, NO <sub>2</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> ) 8081 Pesticides / PCB's (8082) 82608 (VOA) (AOV) 82570 (Semi-VOA) (AOV) 8270 (Semi-VOA)		
	C     C     C       BTEX +		Lemarks:
Dther: Project Name: A/ QC Package: Level 4 Level 4 Level 4 Dther: Project Name:	Project #: Project Manager: Cindy Hur Freelo Sampler $Bob Kra KowSample Temperature:Mumber Volume Preservative HEAL No.Head No.$	3-WA- KC	Received By: (Signature) SII (D(U) Repeived By: (Signature)
CHAIN-OF-CUSTODY RECORD	Address: #50 Rol 4990 Elempfield, NM Phone #: 505-632-4161 Fax #: 505-632-4161 Date Time Matrix Sample I.D. No.	S/15/07 1215/ H2D (GAC - B	Date: Time: Relinduished/By: (Signature) SIST 07 (1700) weld By: (Signature) Date: Time: Relinquished By: (Signature)



#### COVER LETTER

Monday, July 02, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 2nd QTR-2007

Dear Cindy Hurtado:

Order No.: 0706319

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 6/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE a Suite D a Albuquerque, NM 87109 505.345.3975 a Fax 505.345.4107 www.hallenvironmental.com

Hall Envir	onmental Analysi	s Labora	tory, Inc.	Date:	02-Jul-0	07
CLIENT:	San Juan Refining			Client Sample ID:	GAC In	fluent
Lab Order:	0706319			<b>Collection Date:</b>	6/20/20	07 9:05:00 AM
Project:	GAC 2nd QTR-2007			Date Received:	6/21/20	07
Lab ID:	0706319-01			Matrix:	AQUE	DUS
Analyses		Result	PQL Qua	d Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Drganics (DRO)	1.4	1.0	mg/L	1	6/27/2007 2:55:52 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	6/27/2007 2:55:52 PM
Surr: DNOP		112	58-140	%REC	1	6/27/2007 2:55:52 PM
EPA METHOD	8015B: GASOLINE RANG	E				Analyst: NSB
Gasoline Rang	e Organics (GRO)	4.8	1.0	mg/L	20	7/1/2007 12:17:06 AM
Surr: BFB		106	79.2-121	%REC	20	7/1/2007 12:17:06 AM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-but	yl ether (MTBE)	ND	50	µg/L	20	7/1/2007 12:17:06 AM
Benzene		350	20	μg/L	20	7/1/2007 12:17:06 AM
Toluene		ND	20	hð\r	20	7/1/2007 12:17:06 AM
Ethylbenzene		730	20	µg/L	20	7/1/2007 12:17:06 AM
Xylenes, Total		700	40	μg/L	20	7/1/2007 12:17:06 AM
Surr: 4-Bron	nolluorobenzene	90.8	70.2-105	%REC	20	7/1/2007 12:17:06 AM

Analyte detected in the associated Method Blank В

Н Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level RL Reporting Limit

Analyte detected below quantitation limits J Not Detected at the Reporting Limit ND

Value above quantitation range

. . . . . . . . . . . .

Qualifiers:

E

Spike recovery outside accepted recovery limits 5

Value exceeds Maximum Contaminant Level

1/5

Page 1 of 3

Hall Envir	onmental Analysi	s Labora	ntory, In	Dat Dat	e: 02-Ju	1-07
CLIENT:	San Juan Refining			Client Sample II	D: GAC	#1
Lab Order:	0706319			Collection Dat	e: 6/20/2	2007 9:15:00 AM
Project:	GAC 2nd QTR-2007			Date Receive	d: 6/21/2	2007
Lab ID:	0706319-02			Matri	x: AQU	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	6/27/2007 3:31:08 PM
Motor Oil Rang	je Organics (MRO)	ND	5.0	mg/L	1	6/27/2007 3:31:08 PM
Surr: DNOP		111	58-140	%REC	1	6/27/2007 3:31:08 PM
EPA METHOD	8015B: GASOLINE RANG	θE				Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	7/1/2007 12:47:13 AM
Surr: BFB		96.7	79.2-121	%REC	1	7/1/2007 12:47:13 AM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-buly	yl ether (MTBE)	ND	2.5	μg/L	1	7/1/2007 12:47:13 AM
Benzene		ND	. 1.0	µg/L	1	7/1/2007 12:47:13 AM
Toluene		ND	1.0	hð\r	1	7/1/2007 12:47:13 AM
Ethylbenzene		ND	1.0	µg/L	- 1	7/1/2007 12:47:13 AM
Xylenes, Total		ND	2.0	µg/L	1	7/1/2007 12:47:13 AM
Surr: 4-Bron	nofluorobenzene	82.4	70.2-105	%REC	1	7/1/2007 12:47:13 AM

Qualifiers:

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Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- Analyte detected below quantitation limits J
- Not Detected at the Reporting Limit ND

. . .

- Spike recovery outside accepted recovery limits S
- ..... B Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

... ......

RL Reporting Limit

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Page 2 of 3

2/5

Hall Envir	onmental Analysi	s Labora	tory, Inc.	Date:	02-Ju	1-07
CLIENT:	San Juan Refining			Client Sample ID:	GAC	#2
Lab Order:	0706319			Collection Date:	6/20/2	2007 9:25:00 AM
Project:	GAC 2nd QTR-2007			Date Received:	6/21/2	2007
Lab ID:	0706319-03			Matrix:	AQU	EOUS
Analyses		Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range C	Irganics (DRO)	ND	1.0	mg/L	1	6/27/2007 4:06:25 PM
Motor Oil Rang	e Organics (MRO)	• ND	5.0	mg/L	1	6/27/2007 4:06:25 PM
Surr: DNOP		112	58-140	%REC	1	6/27/2007 4:06:25 PM
EPA METHOD	8015B: GASOLINE RANG	E				Analyst: NSB
Gasoline Rang	e Organics (GRO)	NÐ	0.050	mg/L	1	7/1/2007 1:17:12 AM
Surr: BFB		96.5	79.2-121	%REC	1	7/1/2007 1:17:12 AM
EPA METHOD	80218: VOLATILES					Analyst: NSB
Methyi tert-buty	yl elher (MTBE)	ND	2.5	μg/L	1	7/1/2007 1:17:12 AM
Benzene		2.5	1.0	µg/L	1	7/1/2007 1:17:12 AM
Toluene		ND	1.0	μg/L	1	7/1/2007 1:17:12 AM
Ethylbenzene		1.5	1.0	μg/L	1	7/1/2007 1:17:12 AM
Xylenes, Total		2.2	2.0	μg/L	1	7/1/2007 1:17:12 AM
Surr: 4-Bron	nofluorobenzene	82.0	70.2-105	%REC	1	7/1/2007 1:17:12 AM

Qualifiers:

- Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits 5
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit
- 3/5

Page 3 of 3

### QA/QC SUMMARY REPORT

1.2	Elient:
	Project:

San Juan Refining GAC 2nd OTR-2007

Project: GAC 2nd QT	R-2007						١	Work Order:	0706319
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit G	iual
Method: SW8015 Sample ID: MB-13262		MBLK	<b>.</b> ,		Batch	ID: 13262	Analysis D	ate: 6/27/20(	07 1:10:07 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-13262		LCS			Batch	ID: 13262	Analysis D	late: 6/27/20	07 1:45:10 PM
Diesel Range Organics (DRO)	5.722	mg/L	1.0	114	74	157			
Sample ID: LCSD-13262		LCSD			Batch	ID: 13262	Analysis D	ate: 6/27/20	07 2:20:34 PM
Diesel Range Organics (DRO)	5.745	mg/L	1.0	115	74	157	0.392	23	
Method: SW8015									
Sample ID: 0706319-03A MSD		MSD			Batch	ID: R24198	Analysis D	ate: 7/1/20	07 2:17:17 AM
Gasoline Range Organics (GRO)	0.5070	mg/L	0.050	95.5	80	115	2.07	8.39	
Sample ID: 5ML REAGENT BLA		MBLK			Batch	ID: R24198	Analysis D	)ate: 6/30/20	07 6:59:05 PM
Gasoline Range Organics (GRO)	ND	ma/L	0.050				-		
Sample ID: 2.5UG GRO LCS		LCS			Batch	ID: R24198	Analysis D	)ate: 6/30/200	7 11:14:32 PM
Gasoline Range Organics (GRO)	0.5044	mo/l	0.050	101	80	115			• • • • • • • • • • • • • • • • • • • •
Sample ID: 0706319-03A MS	0.0044	MS	0.000	101	Batch	ID: R24198	Analysis (	)ale: 7/1/20	07 1.47:18 AM
Gaspline Range Organics (GRO)	0.4966	mg/L	0.050	93.4	80	115	, maryono o		<b>0</b> ,
Mathada SIMPO21						** ** * . ***********			
Sample ID: 0706319-03A MSD		MSD			Batch	ID: R24198	Analysis (	)ale: 7/1/20	07 21717 AM
Anibud tort butted other (MTRE)	6 034	well	75	<b>63</b> 0	E4 0	120	7410. 0.40	200	07 2.17.17 1 401
	7 290	ру/с uo/l	2.5	87.1	85.9	130	0.633	28	
Toluene	39.31	uo/L	1.0	97.4	86.4	113	274	19	
Elhylbenzene	8.948	ua/L	1.0	93.6	83.5	118	3.16	- 10	
Xvtenes, Total	47.49	µg/L	2,0	98.3	83.4	122	1.81	13	
Sample ID: 5ML REAGENT BLA		MBLK			Batch	ID: R24198	Analysis E	Date: 6/30/20	07 6:59:05 PM
Methyl tert-butyl ether (MTBE)	ND	ua/L	2.5						
Benzene	ND	ug/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	hð\r	2.0						
Sample ID: 100NG BTEX LCS		LCS			Batch	iD: R24198	Analysis D	Date: 6/30/200	7 11:44:25 PM
Methyl tert-bulyl ether (MTBE)	18.69	µg/L	2.5	93.5	51.2	138			
Benzene	19.42	µg/L	1.0	97.1	85.9	113			
Toluene	19.80	μg/L	1.0	99.0	86.4	113			
Ethylbenzene	20.03	µg/L	1.0	100	83.5	118			
Xylenes, Total	59.67	µg/L	2.0	99.4	83.4	122			
Sample ID: 0706319-03A MS		MS			Batch	ID: R24198	Analysis [	Date: 7/1/20	07 1:47:18 AM
Methyl tert-butyl ether (MTBE)	6.774	μg/L	2.5	B2.1	51.2	138			
Benzene	7.244	hgyr	1.0	86.3	85.9	113			
Toluene	38.25	hð/r	1.0	94.8	86.4	113			
Ethylbenzene	8.670	µg/L	1.0	90,1	83.5	118			
-Xylenes, Total	46.63	µg/∟	2.0	96.4	83.4	122			

- Qualifiers:
  - Е Value above quantitation range
  - J Analyte detected below quantitation limits

R RPD outside accepted recovery limits Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

5 Spike recovery putside accepted recovery limits 4/5

Page 1

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Hall	Enviro	nmental	Analysis	Laboratory.	Inc.
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	Sample	Receipt	Checklist			
Client Name SJR		i.	Date and	Time Received:	6	/21/2007
Work Order Number 0706319	. ,	1-1	Receive	ed by TLS		
Checklist completed by Signature	h = b	- All	0 + Date	:		
Matrix	Carrier name	<u>UPS</u>				
Shipping container/cooler in good condition?		Yes 🗹	No 🗔	Not Present		
Custody seals intact on shipping container/cooler	?	Yes 🗹	No	Nol Present	Not Shipped	
Custody seals intact on sample bottles?		Yes 🗌	No 🗆	N/A	Z	
Chain of custody present?		Yes 🗹	No 🗌			
Chain of custody signed when relinquished and re	eceived?	Yes 🗹	No 🗌			
Chain of custody agrees with sample labels?		Yes 🗹	No 🗆			
Samples in proper container/bottle?		Yes 🗹	Na 🗆			
Sample containers intact?		Yes 🗹	No 🗆			
Sufficient sample volume for indicated test?		Yes 🗹	No 🗆			
All samples received within holding time?		Yes 🗹	No 🗆			
Water - VOA vials have zero headspace?	No VOA vials subr	nitted 🗌	Yes 🗹	No 🗌		
Water - Preservation labels on bottle and cap ma	itch?	Yes 🗌	No 🗔	N/A 🔽		
Water - pH acceptable upon receipt?		Yes 🗆	No 🗆			
Container/Temp Blank temperature?		6°	4°C±2Ac	cceptable		
COMMENTS:			if given sur	licient time to cool.		
					میں میں اور اور اور اور اور اور اور اور اور اور	
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Client contacted	Date contacted:	· •		Person contacted		
Contacted by:	Regarding					
Commercia						
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### COVER LETTER

Thursday, July 19, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 3rd QTR-2007

Dear Cindy Hurtado:

Order No.: 0707182

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 7/13/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENT:San Juan RefiningProject:GAC 3rd QTR-2007Lab Order:0707182

Date: 19-Jul-07

### CASE NARRATIVE

"S" flags denote that the surrogate was poor due to sample dilution or matrix interferences.

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Hall Envir	onmental Analysi	s Labora	ntory, In	ic.	Date:	19-Ju	1-07
CLIENT:	San Juan Refining			C	Client Sample ID:	Inlet	
Lab Order:	0707182				<b>Collection Date:</b>	7/12/2	2007 2:30:00 PM
Project:	GAC 3rd QTR-2007				Date Received:	7/13/2	2007
Lab ID:	0707182-01				Matrix:	AQU	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC
Diesel Range (	Drganics (DRO)	ND	1.0		mg/L	1	7/17/2007 12:56:21 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L	1	7/17/2007 12:56:21 PM
Surr: DNOP		105	58-140		%REC	1	7/17/2007 12:56:21 PM
EPA METHOD	8015B: GASOLINE RANG	θE		,			Analyst: BDH
Gasoline Rang	e Organics (GRO)	17	0.50		mg/L	10	7/17/2007 3:13:44 PM
Surr: BFB		148	79.2-121	S	%REC	10	7/17/2007 3:13:44 PM
EPA METHOD	8021B: VOLATILES						Analyst: BDH
Methyl tert-but	yl ether (MTBE)	ND	25		µg/L	10	7/17/2007 3:13:44 PM
Benzene		55	10		µg/Ľ	10	7/17/2007 3:13:44 PM
Toluene		ND	10		µg/L	10	7/17/2007 3:13:44 PM
Ethylbenzene		830	10		hð\r	10	7/17/2007 3:13:44 PM
Xylenes, Total	•	4100	100		µg/L	50	7/18/2007 1:02:31 PM
Surr: 4-Brom	nofluorobenzene	137	70.2-105	S	%REC	10	7/17/2007 3:13:44 PM



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E Value above quantitation range

Analyte detected below quantitation limits j

Not Detected at the Reporting Limit ND

S Spike recovery outside accepted recovery limits 2/7 Analyte detected in the associated Method Blank Holding times for preparation or analysis exceeded

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- MCL Maximum Containinant Level
- RL Reporting Limit

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Page 1 of 3.

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Hall Envir	onmental Analysi	s Labora	tory, In	c.	Date:	19-Ju	1-07
CLIENT:	San Juan Refining			С	lient Sample ID:	EFF-1	
Lab Order:	0707182				<b>Collection Date:</b>	7/12/2	2007 2:20:00 PM
Project:	GAC 3rd QTR-2007				Date Received:	7/13/2	2007
Lab ID:	0707182-02				Matrix:	AQU	EOUS
Analyses	· ·	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					· · · · · · · · · · · · · · · · · · ·	Analyst: SCC
Diesel Range O	rganics (DRO)	ND	1.0		mg/L	1	7/17/2007 1:31:56 PM
Motor Oil Range	e Organics (MRO)	ND	5.0		mg/L	1	7/17/2007 1:31:56 PM
Surr: DNOP		103	58-140		%REC	1	7/17/2007 1:31:56 PM
EPA METHOD	8015B: GASOLINE RANG	θE			· .		Analyst: BDH
Gasoline Range	e Organics (GRO)	0.28	0.050		mg/L	1	7/17/2007 4:13:48 PM
Surr: BFB		130	79.2-121	S	%REC	1	7/17/2007 4:13:48 PM
EPA METHOD	8021B: VOLATILES						Analyst: BDH
Methyl tert-buty	l ether (MTBE)	ND	2.5		µg/L	1	7/17/2007 4:13:48 PM
Benzene		2.3	1.0		µg/L	1	7/17/2007 4:13:48 PM
Toluene		ND	1.0		µg/L	1	7/17/2007 4:13:48 PM
Ethylbenzene		12	1.0		µg/L	1	7/17/2007 4:13:48 PM
Xylenes, Total		78	2.0		µg/L	1	7/17/2007 4:13:48 PM
Surr: 4-Brom	ofluorobenzene	119	70.2-105	S	%REC	1	7/17/2007 4:13:48 PM

\* Qualifiers:

Value exceeds Maximum Contaminant Level

Е Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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Page 2 of 3

Hall Envir	onmental Analysi	Date Date	: 19-Ju	1-07		
CLIENT:	San Juan Refining			Client Sample ID	: EFF-2	2
Lab Order:	0707182			<b>Collection Date</b>	: 7/12/2	2007 2:25:00 PM
Project:	GAC 3rd QTR-2007			Date Received	: 7/13/2	2007
Lab ID:	0707182-03			Matrix	: AQU	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Drganics (DRO)	ND	1.0	mg/L	1	7/17/2007 2:07:52 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	7/17/2007 2:07:52 PM
Surr: DNOP		96.8	58-140	%REC	1	7/17/2007 2:07:52 PM
EPA METHOD	8015B: GASOLINE RANG	GE				Analyst: BDH
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	7/17/2007 4:43:46 PM
Surr: BFB		116	79.2-121	%REC	1	7/17/2007 4:43:46 PM
EPA METHOD	8021B: VOLATILES					Analyst: BDH
Methyl tert-buty	yl ether (MTBE)	ND	2.5	µg/L	1	7/17/2007 4:43:46 PM
Benzene		ND	1.0	µg/L	1	7/17/2007 4:43:46 PM
Toluene		ND	1.0	µg/L	1	7/17/2007 4:43:46 PM
Ethylbenzene		ND	1.0	µg/L	1	7/17/2007 4:43:46 PM
Xylenes, Total		ND	2.0	µg/L	1	7/17/2007 4:43:46 PM
Surr: 4-Brom	nofluorobenzene	104	70.2-105	%REC	1	7/17/2007 4:43:46 PM

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- Е Value above quantitation range.
- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 4/7

Analyte detected in the associated Method Blank

MCL Maximum Contaminant Level

RL Reporting Limit

Holding times for preparation or analysis exceeded



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### **QA/QC SUMMARY REPORT**

Project: GAC 3rd QT	`R-2007					Work Order: 0707182
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RPDLimit Qual
Method: SW8015 Sample ID: MB-13403		MBLK			Batch ID: 13403	3 Analysis Date: 7/17/2007 11:11:07 AN
Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Sample ID: LCS-13403	ND ND	mg/L mg/L LCS	1.0 5.0		Batch ID: 13403	Analysis Date: 7/17/2007 11:46:03 AM
Diesel Range Organics (DRO) Sample ID: LCSD-13403	5.424	mg/L LCSD	1.0	95.6	74 157 Batch ID: <b>1340</b> 3	3 Analysis Date: 7/17/2007 12:21:02 PM
Diesel Range Organics (DRO)	5.912	mg/L	1.0	105	74 157	8.62 23
Method: SW8015 Sample ID: 0707182-03A MSD		MSD			Batch ID: R24424	1 Analysis Date: 7/17/2007 5:43:45 PM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	0.4530	mg/L MBLK	0.050	85.2	80 115 Batch ID: <b>R2442</b> 4	1.11 8.39 <b>4</b> Analysis Date: 7/17/2007 8:50:32 AM
Gasoline Range Organics (GRO) Sample ID: 5ML RB	ND	mg/L MBLK	0.050		Batch ID: R2443	5 Analysis Date: 7/18/2007 9:57:03 At
Gasoline Range Organics (GRO) Sample ID: 2.5UG LCS	ND	mg/L LCS	0.050		Batch ID: R24424	4 Analysis Date: 7/17/2007 9:18:52 Pt
Gasoline Range Organics (GRO) Sample ID: 2.0UG GRO CCV	0.4442	mg/L LCS	0.050	83.3	80 115 Batch ID: <b>R2443</b>	5 Analysis Date: 7/18/2007 3:13:05 Pt
Gasoline Range Organics (GRO) Sample ID: 0707182-03A MS	0.3804	mg/L MS	0.050	88.2	80 115 Batch ID: <b>R2442</b> 4	4 Analysis Date: 7/17/2007 5:13:43 Pt
Gasoline Range Organics (GRO)	0.4480	mg/L	0.050	84.2	80 115	

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

 H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S

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Page I

# QA/QC SUMMARY REPORT

lie	n	t:
-0	ie	ct

San Juan Refining GAC 3rd OTR-2007

GAC 3rd QT	R-2007						· · · · ·	Work (	)rder:	0707182
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPD	Limit	Qual
Method: SW8021										<del>.</del>
Sample ID: 0707182-03A MSD		MSD			Batch	ID: <b>R24424</b>	Analysis E	Date:	7/17/2	2007 5:43:45 PM
Methyl tert-butyl ether (MTBE)	7.828	µg/L	2.5	94.3	51.2	138	0.281	28		
Benzene	5.550	µg/L	1.0	99.1	85.9	113	0.397	27		
Toluene	36.60	µg/L	1.0	91.5	86.4	113	0.241	19		
Ethylbenzene	7.618	µg/L	1.0	96.4	83.5	118	0.732	10		
Xylenes, Total	44.07	µg/L	2.0	92.4	83.4	122	0.136	13		
Sample ID: 5ML RB		MBLK			Batch	ID: <b>R24424</b>	Analysis [	Date:	7/17/2	2007 8:50:32 AM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5							
Benzene	ND	µg/L	1.0							
Toluene	ND	µg/L	1.0							
Ethylbenzene	ND	µg/L	1.0							
Xylenes, Total	ND	µg/L	2.0							
Sample ID: 5ML RB		MBLK			Batch	ID: <b>R24435</b>	Analysis [	Date:	7/18/2	2007 9:57:03 AM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5							
Benzene	ND	µg/L	1.0							
Toluene	ND	µg/L	1.0							
Ethylbenzene	ND	µg/L	1.0							
Xylenes, Total	ND	µg/L	2.0							
Sample ID: 2.5UG LCS		LCS			Batch	ID: <b>R24424</b>	Analysis (	Date:	7/17/2	2007 9:18:52 PM
thyl tert-butyl ether (MTBE)	8.106	µg/L	2.5	97.7	51.2	138				
Benzene	5.780	µg/L	1.0	103	85.9	113				
Toluene	37.89	µg/L	1.0	94.7	86.4	113				
Ethylbenzene	7.604	µg/L	1.0	96.3	83.5	118				
Xylenes, Total	43.98	μg/L	2.0	95.6	83.4	122				
Sample ID: 100NG BTEX CCV		LCS			Batch	ID: <b>R24435</b>	Analysis I	Date:	7/18/3	2007 3:43:04 PM
Methyl tert-butyl ether (MTBE)	21.42	µg/L	2.5	53.6	51.2	138				
Benzene	19.47	hð\r	1.0	97.4	85.9	113				
Toluene	18.92	µg/L	1.0	94.6	86.4	113				
Ethylbenzene	18.63	µg/L	1.0	93.2	83.5	118				
Xylenes, Total	56.62	µg/L	2.0	94.4	83.4	122				
Sample ID: 0707182-03A MS		MS			Batch	ID: R24424	Analysis	Date:	7/17/	2007 5:13:43 PM
Methyl tert-butyl ether (MTBE)	7.806	µg/L	2.5	94.0	51.2	138				
Benzene	5.528	µg/L	1.0	98.7	85.9	113				
Toluene	36.51	µg/L	1.0	91.3	86.4	113				
Ethylbenzene	7.674	μg/L	1.0	97.1	83.5	118				
Xylenes, Total	44.01	µg/L	2.0	92.3	83.4	122				

- Qualifiers:
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

S

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#### Sample Receipt Checklist

Date and Time Received:

NJM

Person contacted

Received by

07

7/13/2007

#### Client Name SJR

Work Order Number 0707182

Checklist completed by

Signature

Matrix:

Carrier name UPS

Shipping container/cooler in good condition?	Yes 🗸	No	Not Present		
Custody seals intact on shipping container/cooler?	Yes	No	Not Present	Not Shipped	
Custody seals intact on sample bottles?	Yes	No	N/A 🗸		
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	<b>1</b>		
Sample containers intact?	Yes 🖌	No			
Sufficient sample volume for indicated test?	Yes 🗸	No			
All samples received within holding time?	Yes 🗸	No			
Water - VOA vials have zero headspace? No VOA vi	ials submitted	Yes 💅	No		
Water - Preservation labels on bottle and cap match?	Yes	No	N/A 🗸		
Water - pH acceptable upon receipt?	Yes	No	N/A		
Container/Temp Blank temperature?	<b>4</b> °	4° C ± 2 Acceµ	otable		
COMMENTS:		If given sufficie	ent time to cool.		

Client contacted

Date contacted:

Regarding:

Comments:

Contacted by:

Corrective Action

		A901 Hawkii	Tel. 505.345					eiŪ\ze	710 710 710 710 710 710 710 710 710 710	108 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 109 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 100 po 10	Metho Metho Metho Metho Metho Metho Metho	BCBV 831C EDC ( EDC ( 1bH ( 1bH ( RIEX	X	· · · · · · · · · · · · · · · · · · ·	×					-		ks:	
							(12	08) s;			<b>a</b> +	8TEX	X	X	×			 				Remar	1
QA / QC Packane.	Std D Level 4 D	Other:	Project Name: 3rd	GAC OT AUD T	Project #:		Project Manager:		Samptory / RMK	Sample Temperature: 🖌 😋 🗠	Preservative	HEAL NO. HEAL NO. HEAL NO.	4-VOA X 07071821	4-10A X X2	4-VOA X 3						Cab D 11	Received by (Signafure) 7/13/07	Received By Kignature)
Č.		In-OF-CUSTODY Record	SAN JUAN REFINIUG		#50 CR 4990	DOMFIELD, NM 87413			+ 505-632-41/el	505-632-3911		lime Matrix Sample I.U. No.	230pm Han INIET	220r Hac EFF-1	225 H2O EFF-2							Ime: Religished By: (Signature)	Time: Relinquished By (Signature)
		CHA	Client:		Address:	100			Phone #	Fax #:	C	Date	7/12/07			-						Highor Japan	Date:

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### COVER LETTER

Thursday, August 23, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC Analysis 8/14/07

Dear Cindy Hurtado:

Order No.: 0708205

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 8/16/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Date: 23-Aug-07

CLIENT: Project: Lab Order:	San Juan Refining GAC Analysis 8/14/0 0708205	07	Work Order Sample Summary						
Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date					
0708205-01A	GAC Lead	13633	EPA Method 8015B: Diesel Range	8/14/2007 1:50:00 PM					
0708205-01A	GAC Lead	R24867	EPA Method 8021B: Volatiles	8/14/2007 1:50:00 PM					
0708205-01A	GAC Lead	R24867	EPA Method 8015B: Gasoline Range	8/14/2007 1:50:00 PM					
0708205-02A	GAC Lag	13633	EPA Method 8015B: Diesel Range	8/14/2007 2:00:00 PM					
0708205-02A	GAC Lag	R24867	EPA Method 8021B: Volatiles	8/14/2007 2:00:00 PM					
0708205 024	GACLag	P24867	EPA Method 8015B: Gasoline Range	8/14/2007 2:00:00 PM					

Page 1 of 1

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Hall Envi	ironmental Analysis L	aborat	Inc.	<b>Date:</b> 23-Aug-07							
CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0708205 GAC Analysis 8/14/07 0708205-01			Clie Co E	.ead 007 1:50:00 PM 007 OUS						
Analyses		Result	Qual	MDL	PQL	Units	DF	Date Analyzed			
CAS # EP	A METHOD 8015B: DIESEL RAI	NGE						Analyst: SCC			
TPH-Diesel	Diesel Range Organics (DRO)	0.66	J	0.53	1.0	mg/L	1	8/18/2007 1:26:40 AM			
TPH-Motor Oil	Motor Oil Range Organics (MRO)	ND		4.0	5.0	mg/L	1	8/18/2007 1:26:40 AM			
117-84-0	Surr: DNOP	124		0	58-140	%REC	1	8/18/2007 1:26:40 AM			
CAS # EP	A METHOD 8015B: GASOLINE	RANGE						Analyst: SMP			
TPH-Gasoline	Gasoline Range Organics (GRO)	0.035	J	0.014	0.050	mg/L	1	8/22/2007 9:40:32 PM			
460-00-4	Surr: BFB	102		0	79.2-121	%REC	1	8/22/2007 9:40:32 PM			
CAS # EP	A METHOD 8021B: VOLATILES	i						Analyst: SMP			
71-43-2	Benzene	0.32	ł	0.047	1.0	µg/Ł	1	8/22/2007 9:40:32 PM			
108-88-3	Toluene	ND		0.047	1.0	µg/L	1	8/22/2007 9:40:32 PM			
100-41-4	Ethylbenzene	1.6		0.047	1.0	µg/L	1	8/22/2007 9:40:32 PM			
1330-20-7	Xylenes, Total	5.8		0.16	2.0	µg/L	1	8/22/2007 9:40:32 PM			
460-00-4	Surr: 4-Bromofluorobenzene	86.0		0	70.2-105	%REC	1	8/22/2007 9:40:32 PM			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

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Page 1 of 2
			end in	· · · · · · · · · · · · · · · · · ·				
CLIENT:	San Juan Refining				Clie	nt Sample I	D: GAC L	ag
Lab Order:	0708205				Co	llection Da	te: 8/14/20	007 2:00:00 PM
Project:	GAC Analysis 8/14/07				D	ate Receive	ed: 8/16/20	)07
Lab ID:	0708205-02					Matr	ix: AQUE	OUS
Analyses		Result	Qual	MDL	PQL	Units	DF	Date Analyzed
CAS# EPA	METHOD 8015B: DIESEL RAN	NGE						Analyst: SCC
TPH-Diesel C	iesel Range Organics (DRO)	0.68	J	0.53	1.0	mg/L	1	8/18/2007 2:01:55 AM
TPH-Motor Oil M	Iotor Oil Range Organics (MRO)	ND		4.0	5.0	mg/L	1	8/18/2007 2:01:55 AM
117-84-0	Surr: DNOP	122		0	58-140	%REC	1	8/18/2007 2:01:55 AM
CAS # EPA	METHOD 8015B: GASOLINE	RANGE						Analyst: SMP
TPH-Gasoline C	Basoline Range Organics (GRO)	0.024	f	0.014	0.050	mg/L	1	8/22/2007 11:10:16 PM
460-00-4	Surr: BFB	102		0	79.2-121	%REC	1	8/22/2007 11:10:16 PM
CAS # EPA	METHOD 8021B: VOLATILES							Analyst: SMP
71-43-2 E	Benzene	ND		0.047	1.0	hð\r	1	8/22/2007 11:10:16 PM
108-88-3 1	Foluene	0.34	J	0.047	1.0	µg/L	1	8/22/2007 11:10:16 PM
100-41-4 E	Ethylbenzene	0.15	J	0.047	1.0	µg/L	1	8/22/2007 11:10:16 PM
1330-20-7	Kylenes, Total	0.61	J	0.16	2.0	µg/L	1	8/22/2007 11:10:16 PM
460-00-4	Surr: 4-Bromofluorobenzene	87.0		0	70.2-105	%REC	1	_8/22/2007 11:10:16 PM

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Date: 23-Aug-07

, Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

\* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

3/7

Page 2 of 2

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Laboratory,
Analysis ]
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Lab Order:

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Lab Order:	0708205					1	
Client:	San Juan Refining				DATES R	EPORT	
Project:	GAC Analysis 8/14/(	20				-	
Sample ID	Client Sample 1D	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analyšis Date
0708205-01A	GAC Lead	8/14/2007 1:50:00 PM	Aqueous	EPA Method 8015B: Diesel Range	13633	8/17/2007	8/18/2007
				EPA Method 8015B: Gasoline Range	R24867		8/22/2007
				EPA Method 8021B: Volatiles	R24867		8/22/2007
0708205-02A	GAC Lag	8/14/2007 2:00:00 PM		EPA Method 8015B: Diesel Range	13633	8/17/2007	8/18/2007
				EPA Method 8015B: Gasoline Range	R24867		8/22/2007
				EPA Method 8021B: Volatiles	R24867		8/22/2007

Page 1 of 1

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# QA/QC SUMMARY REPORT

Project: GAC Analys	sis 8/14/07						Worl	<b>c Order:</b> 0708205
Analyte	Result	Units	PQL	%Rec	LowLimit H	ighLimit	%RPD RF	PDLimit Qual
Method: SW8015 Sample ID: MB-13633		MBLK			Batch ID:	13633	Analysis Date:	8/17/2007 11:43:11 AM
Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Surr: DNOP	ND ND 1.127	mg/L mg/L mg/L	1.0 5.0 0	113	58	140		
Sample ID: LCS-13633		LCS			Batch ID:	13633	Analysis Date:	8/17/2007 12:18:30 PM
Diesel Range Organics (DRO) Surr: DNOP Sample ID: LCSD-13633	4.792 0.5481	mg/L mg/L LCSD	1.0 0	95.8 110	74 58 Batch ID:	157 140 <b>13633</b>	Analysis Date:	8/17/2007 12:54:07 PM
Diesel Range Organics (DRO) Surr: DNOP	5.484 0.5807	mg/L mg/L	1.0 0	110 116	74 58	157 140	13.5 0	23 0
Method: SW8015 Sample ID: 0708205-01A MSD		MSD			Batch ID:	R24867	Analysis Date:	8/22/2007 10:40:14 PM
Gasoline Range Organics (GRO) Surr: BFB Sample ID: 5ML RB	0.4708 22.46	mg/L mg/L <i>MBLK</i>	0.050 <sub>,</sub> 0	87.2 112	80 79.2 Batch ID:	115 121 <b>R24867</b>	0.339 8 0 Analysis Date:	8.39 0 8/22/2007 7:41:34 AM
Gasoline Range Organics (GRO) Surr: BFB Sample ID: 2.5UG GRO LCS	0.01700 19.32	mg/L mg/L <i>LC</i> S	0.050 0	96.6	79.2 Batch ID:	121 <b>R24867</b>	Analysis Date:	J 8/22/2007 9:11:36 AM
Gasoline Range Organics (GRO) Surr: BFB Sample ID: 0708205-01A MS	0.4884 22.18	mg/L mg/L MS	0.050 0	94.3 111	80 79.2 Batch ID:	115 121 <b>R24867</b>	Analysis Date:	8/22/2007 10:10:21 PM
Gasoline Range Organics (GRO) Surr: BFB	0.4724 22.57	mg/L mg/L	0.050 0	87.5 113	80 79.2	115 121		

#### Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S

Since recovery outside accepted recovery limits 5/7

Page 1

## QA/QC SUMMARY REPORT

ject:

San Juan Refining GAC Analysis 8/14/07

GAC Analys	sis 8/14/07			-			м	ork Ord	ler: 0708205
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLim	iit Qual
Method: SW8021									
Sample ID: 0708205-01A MSD		MSD			Batch	ID: <b>R24867</b>	Analysis Da	ate: 8/22	2/2007 10:40:14 PM
Benzene	6.032	µg/L	1.0	102	85.9	113	1.20	27	
Toluene	37.85	µg/L	1.0	94.6	86.4	113	1.08	19	
Ethylbenzene	9.502	µg/L	1.0	101	83.5	118	0.337	10	
Surr: 4-Bromofluorobenzene	19.37	µg/L	0	96.9	70.2	105	0	0	
Sample ID: 5ML RB		MBLK			Batch	ID: <b>R24867</b>	Analysis Da	ate: 8/2	22/2007 7:41:34 AM
Benzene	ND	hð\r	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 4-Bromofluorobenzene	16.52	µg/L	0	82.6	70.2	105			
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: <b>R24867</b>	Analysis Da	ate: 8/:	22/2007 9:41:42 AM
Benzene	18.36	µg/L	1.0	91.8	85. <del>9</del>	113			
Toluene	18.60	µg/L	1.0	93.0	86.4	113			
Ethylbenzene	18.90	µg/L	1.0	94.5	83.5	118			
Xylenes, Total	56.47	µg/L	2.0	94.1	83.4	122			
Surr: 4-Bromofluorobenzene	18.18	µg/L	0	90.9	70.2	105			
Sample ID: 0708205-01A MS		MS			Batch	ID: R24867	Analysis D	ate: 8/2	2/2007 10:10:21 PM
Penzene	5.960	µg/L	1.0	101	85.9	113			
🤹 Dene	37.44	µg/L	1.0	93.6	86.4	113			,
Ethylbenzene	9.470	µg/L	1.0	100	83.5	118			
Surr: 4-Bromofluorobenzene	19.49	µg/L	0	97.5	70.2	105			

qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S

Snike recovery outside accepted recovery limits 6/7

	Sample Receipt Cl	necklist	· ·	
Client Name SJR		Date and Time	Received:	8/16/2007
Work Order Number 0708205		Received by	TLS	
Checklist completed by January Signature	i Shate	10/07		
Matrix C	arrier name Greyhound			
Shipping container/cooler in good condition?	Yes 🔽	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🔽	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes	No	N/A	
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 🗌		:
Water - VOA vials have zero headspace? No V	OA vials submitted	Yes 🔽	No	
Water - Preservation labels on bottle and cap match?	Yes	No 🗌	N/A 🔽	
Water - pH acceptable upon receipt?	Yes	No 🗔	N/A	
Container/Temp Blank temperature?	<b>9</b> °	4° C ± 2 Accept	able	
COMMENTS:		If given sufficien	t time to cool.	
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Client contacted Date c	ontacted:	Per	son contacted	
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Contacted by: Regard	ding		· · ·	
Comments:				
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Corrective Action			1 1 . 1	
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HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com	BCRA 8 Metals 8310 (PVA or PAH) ARAN 8 Metals Anions (F, Cl, NO <sub>2</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> ) 8081 Pesticides / PCB's (8082) 82608 (VOA) 8270 (Semi-VOA) Air Bubbles or Headspace (Y or N)		
	BTEX + ▲ ATBE + TPH (Gasoline Only) EDB (Method 504.1) EDB (Method 418.1) EDB (Method 204.1)	$\begin{array}{c c} \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ \hline \\ $	Remarks:
QA/ GC Package: Std ロ Level 4 I Std ロ Level 4 I Other: Project Name: 子AC S-14-07 Project #:	Project Manager: Sampler: Tob Kr. A.K. A.K. Sample Temperature:	4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-VOA 4-	Received By: (Signature) \$7/12/07 An. 40 Received By: (Signature)
CHAIN-OF-CUSTODY RECORD Client: SAN JUAN REGINING Address: # 50 75 4990	Bloomfield NM 87413       Phone #: 505-632-4161       Fax #: 505-632-4161       Date     Time       Matrix     Sample I.D. No.	E-14-c7 1:50 H20 CAC Lead E-14-c7 2:00 H20 CAG LAG	Date:     Time:     Relipenished By: (Signature) $\partial -14 - o$ $\mathcal{B}$ : (S $V$ $\partial =14 + o$ $\mathcal{B}$ : (S $V$ Date:     Time:     Relinquished By: (Signature)

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#### COVER LETTER

Friday, September 14, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 9-10-07

Dear Cindy Hurtado:

Order No.: 0709114

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 9/11/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Date: 14-Sep-07

CLIENT:San Juan RefiningProject:GAC 9-10-07Lab Order:0709114

## Work Order Sample Summary

Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0709114-01A	GAC Lead	R25145	EPA Method 8021B: Volatiles	9/10/2007 1:20:00 PM
0709114-02A	GAC Lag	R25145	EPA Method 8021B: Volatiles	9/10/2007 1:30:00 PM

Page 1 of 1

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Date: 17-Sep-07

CLIENT:	San Juan Refining		. (	Client Sample ID:	GAC L	.ead
Lab Order:	0709114	·	•	<b>Collection Date:</b>	9/10/20	007 1:20:00 PM ; · · · ]
Project:	GAC 9-10-07			Date Received:	9/11/2(	007
Lab ID:	0709114-01			Matrix:	AQUE	OUS
Analyses		Result	PQL Qua	Units	DF	Date Analyzed
EPA METHOD	8021B: VOLATILES			,,,		Analvst: SMF
Benzene		ND	1.0	µg/L	1	9/13/2007 2:25:02 AM
Toluene		ND	1.0	µg/L	1	9/13/2007 2:25:02 AM
Ethylbenzene		ND	1.0	µg/L	1	9/13/2007 2:25:02 AM
Xylenes, Total		ND	2.0	µg/L	1	9/13/2007 2:25:02 AM
Surr: 4-Brom	ofluorobenzene	82.5	70.2-105	%REC	1	9/13/2007 2:25:02 AM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 2

CLIENT:San Juan RefiningLab Order:0709114Project:GAC 9-10-07Lab ID:0709114-02

Date: 17-Sep-07

Client Sample ID: GAC Lag Collection Date: 9/10/2007 1:30:00 PM Date Received: 9/11/2007 Matrix: AQUEOUS

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES		· · · · · · · · · · · · · · · · · · ·			Analyst: SMP
Benzene	ND	1.0	µg/L	1	9/13/2007 4:24:51 AM
Toluene	ND	1.0	µg/L	1	9/13/2007 4:24:51 AM
Ethylbenzene	ND	1.0	µg/L	. 1	9/13/2007 4:24:51 AM
Xylenes, Total	ND	2.0	µg/L	1	9/13/2007 4:24:51 AM
Surr: 4-Bromofluorobenzene	82.1	70.2-105	%REC	1	9/13/2007 4:24:51 AM

Qualifiers:

\* Value exceeds Maximum Contaminant Level

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 2 of 2

Han Envii	ronmental Analysi	is Laboratory, Inc	دغ		14-Sep-07	
Lab Order: Client: Project:	0709114 San Juan Refining GAC 9-10-07	<i>.</i>			DATES REPOR	~
Sample 1D	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID Prep Date	Analysis Date
0709114-01.A 0709114-02.A	GAC Lead GAC Lag	9/10/2007 1-20:00 PM 9/10/2007 1-30:00 PM	Aqueous	EPA Method 8021B: Volatiles EPA Method 8021B: Volatiles	R25145 R25145	9/13/2007 9/13/2007
				·		

Page 1 of 1

## **QA/QC SUMMARY REPORT**

Client: Project: San Juan Refining GAC 9-10-07

Work Order: 0709114

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDL	imit Qual
Method: SW8021									
Sample ID: 0709114-01A MSD		MSD			Batch	ID: <b>R25145</b>	Analysis D	ate:	9/13/2007 3:24:54 AN
Benzene	6.092	µg/L	1.0	109	85.9	113	4.40	27	
Toluene	39.58	µg/L	1.0	99.0	86.4	113	5.40	19	
Ethylbenzene	8.484	µg/L	1.0	102	83.5	118	5.00	10	•
Xylenes, Total	48.17	hd\r	2.0	102	83.4	122	5.53	13	
Surr: 4-Bromofluorobenzene	18.94	µg/L	0	94.7	70.2	105	0	0	
Sample ID: 5ML RB		MBLK			Batch	ID: R25145	Analysis D	ate:	9/12/2007 8:19:18 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Surr: 4-Bromofluorobenzene	16.89	μg/L	0	84.4	70.2	105			
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R25145	Analysis D	ate: 9	9/12/2007 10:20:02 AI
Benzene	19.41	µg/L	1.0	97.0	85.9	113			
Toluene	19.65	µg/L	1.0	98.2	86.4	113			
Ethylbenzene	19.83	µg/L	1.0	99.2	83.5	118			
Xylenes, Total	59.80	µg/L	2.0	99.7	83.4	122			
Surr: 4-Bromofluorobenzene	18.80	µg/L	0	94.0	70.2	105			
Sample ID: 0709114-01A MS		MS			Batch	ID: R25145	Analysis D	ate:	9/13/2007 2:54:57 A
Benzene	5.830	µg/L	1.0	104	85.9	113			
Toluene	37.50	μg/L	1.0	93.8	86.4	113			
Ethylbenzene	8.070	μg/L	1.0	96.9	83.5	118			
Xylenes, Total	45.58	µg/L	2.0	96.4	83.4	122			
Surr: 4-Bromofluorobenzene	18.28	µg/L	0	91.4	70.2	105			

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits  $5 \neq 6$ 

	Sample Receipt	Checklist		
Client Name SJR		. Date and Tim	e Received:	9/11/2007
Work Order Number 0709114		Received by	ARS	
Checklist completed by Signature	9/11/07.	ate		
Matrix Ca	rrier name <u>UPS</u>			
Shipping container/cooler in good condition?	Yes 🔽	No	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🔽	No	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes	No	N/A	
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 🗍		
later - VOA vials have zero headspace? No VC	A vials submitted	Yes 🗹	No	
Water - Preservation labels on bottle and cap match?	Yes 🗍	No	N/A 🔽	
Water - pH acceptable upon receipt?	Yes 🗌	No	N/A	
Container/Temp Blank temperature?	7°	4° C ± 2 Accep	table	
COMMENTS:		If given sufficier	nt time to cool.	

Client contacted

Contacted by:

Comments:

Date contacted:
Regarding

Person contacted

Corrective Action

6/6

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109	Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com	ANANYSIS REQUEST	(	0 ها:(Diesel) (1989) (202, 50, 50) (2082) (2082) (2082) (2082) (2082) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (2092) (	) H9T + 15B (G 18.1) (1.81 (1.81 (1.81 (1.81 (1.81 (1.81 (1.81 (1.81 (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.81) (1.	- 3811 08 bod 7 bod 7 bod 8 bod 8 bod 8 bod 8 bod 8 bod 8 bod 8 bod 8 bod 8 bod 8 bod 9 0 D 9 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 0 0 0 0	TEX + M PH Meth PH Meth PH (Met) PH (Me) PH (Met) PH (Me)	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8							narks:	
QA/ QC Package: Std 🗖 Level 4 🗹 Other:	Project Name: 9-10-07 GAC 9-10-07	Project #:		Project Manager: Cander the hardo [802]	Sampler (36 Kraken )	Sample Temperature:	Preservative         HEAL No.           HEAL No.         HEAL No.	3004 X 104004 M	3 VOA × 2 ×						Referived By (Signature) A 10.05 9 11 07	Received By: (Signature)
chain-of-custody record	Client: SAN JUAN REPINING	Address: #50 CR 4990	Bloomfield, NM 87413		Phone #: 505-632- 4161	Fax #: 505 - 632 - 3911	Date Matrix Sample I.D. No.	9-10-07 1:25 H20 GAG Lee D	9-10-07 130 H20 140 LAG						Date: Time: Relinguished By: (Signature)	Date: Time: Relinquished By: (Signature)



### COVER LETTER

Monday, October 22, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 4TH QTR

Order No.: 0710204

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 10/10/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE 
Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com



Date: 22-Oct-07

# Hall Environmental Analysis Laboratory, Inc.

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CLIENT: Project: Lab Order:	San Juan Refining GAC 4TH QTR 0710204		Work Order	Sample Summary		
Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date		
0710204-01A	GAC Inlet	14088	EPA Method 8015B: Diesel Range	10/9/2007 1:10:00 PM		
0710204-01A	GAC Inlet	R25530	EPA Method 8021B: Volatiles	10/9/2007 1:10:00 PM		
0710204-01A	GAC Inlet	R25530	EPA Method 8021B: Volatiles	10/9/2007 1:10:00 PM		
0710204-01A	GAC Inlet	R25530	EPA Method 8015B: Gasoline Range	10/9/2007 1:10:00 PM		
0710204-01A	GAC Inlet	R25530	EPA Method 8015B: Gasoline Range	10/9/2007 1:10:00 PM		
0710204-02A	GAC Lead	14088	EPA Method 8015B: Diesel Range	10/9/2007 1:00:00 PM		
0710204-02A	GAC Lead	R25530	EPA Method 8021B: Volatiles	10/9/2007 1:00:00 PM		
0710204-02A	GAC Lead	R25530	EPA Method 8015B: Gasoline Range	10/9/2007 1:00:00 PM		
0710204-03A	GAC Lag	14088	EPA Method 8015B: Diesel Range	10/9/2007 12:45:00 PM		
0710204-03A	GAC Lag	R25530	EPA Method 8021B: Volatiles	10/9/2007 12:45:00 PM		
0710204-03A	GAC Lag	R25530	EPA Method 8015B: Gasoline Range	10/9/2007 12:45:00 PM		

Page 1 of 1



Date: 22-Oct-07

CLIENT:	San Juan Refining
Project:	GAC 4TH QTR
Lab Order:	0710204

### **CASE NARRATIVE**

Analytical Comments for METHOD 8015GRO\_W, SAMPLE 0710204-01A: Elevated surrogate due to matrix interference.

Date: 22-Oct-07

CLIENT:	San Juan Refining		· (	Client Sampl	e ID: GAC	Inlet	
Lab Order:	0710204			Collection I	Date: 10/9/2	2007 1:10:00 PM	
Project:	GAC 4TH QTR	Date Received:			ived: 10/10	10/10/2007	
Lab ID:	0710204-01			Ma	trix: AQUI	EOUS	
Analyses		Result	PQL Qua	Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE				`	Analyst: SCC	
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	10/16/2007 3:51:11 PM	
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	10/16/2007 3:51:11 PM	

Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	10/16/2007 3:51:11 PM
Surr: DNOP	119	58-140		%REC	1	10/16/2007 3:51:11 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	16	0.50		mg/L	10	10/11/2007 2:50:00 PM
Surr: BFB	124	79.2-121	S	%REC	10	10/11/2007 2:50:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	37	10		µg/L	10	10/11/2007 2:50:00 PM
Toluene	ND	10		µg/L	10	10/11/2007 2:50:00 PM
Ethylbenzene	760	10		µg/L	10	10/11/2007 2:50:00 PM
Xylenes, Total	3900	100		µg/L	50	10/11/2007 2:17:19 PM
Surr: 4-Bromofluorobenzene	98.2	70.2-105		%REC	50	10/11/2007 2:17:19 PM

Qualifiers:

- Value exceeds Maximum Contaminant Level \*
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits S
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 22-Oct-07

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0710204 GAC 4TH QTR 0710204-02			Client Sample ID: Collection Date: Date Received: Matrix:	GAC 10/9/2 10/10 AQU	Lead 2007 1:00:00 PM /2007 EOUS
Analyses		Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range C	Drganics (DRO)	ND	1.0	mg/L	1	10/16/2007 4:26:29 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	10/16/2007 4:26:29 PM
Surr: DNOP		117	58-140	%REC	1	10/16/2007 4:26:29 PM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Range	e Organics (GRO)	ND	0.050	mg/L	1	10/11/2007 3:50:04 PM
Surr: BFB		97.4	79.2-121	%REC	1	10/11/2007 3:50:04 PM
EPA METHOD	8021B: VOLATILES					Analyst: <b>NSB</b>

FA WE HOD OUZID. VOLATILES					Analyst. Noc
Benzene	ND	1.0	µg/L	1	10/11/2007 3:50:04 PM
Toluene	ND	1.0	µg/L	1	10/11/2007 3:50:04 PM
Ethylbenzene	ND	1.0	µg/L	1	10/11/2007 3:50:04 PM
Xylenes, Total	ND	2.0	µg/L	<sup>•</sup> 1	10/11/2007 3:50:04 PM
Surr: 4-Bromofluorobenzene	86.3	70.2-105	%REC	1	10/11/2007 3:50:04 PM



Qualifiers:

*	Value	exceeds	Maximum	Contaminant	Level

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 22-Oct-07

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10/11/2007 4:19:55 PM

							······································
CLIENT:	San Juan Refining			Clie	nt Sample ID:	GAC	Lag
Lab Order:	0710204			Co	llection Date:	10/9/2	2007 12:45:00 PM
Project:	GAC 4TH QTR			, D	ate Received:	10/10/	/2007
Lab ID:	0710204-03				Matrix:	AQUI	EOUS
Analyses		Result	PQL	Qual U	nits	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE	· · · · · · · · · · · · · · · · · · ·					Analyst: SCC
Diesel Range C	Drganics (DRO)	ND	1.0	m	g/L	1	10/16/2007 5:01:46 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	m	g/L	1	10/16/2007 5:01:46 PM
Surr: DNOP		118	58-140	%	REC	1	10/16/2007 5:01:46 PM
EPA METHOD	8015B: GASOLINE RAN	IGE					Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050	m	g/L	1	10/11/2007 4:19:55 PM
Surr: BFB		96.1	79.2-121	%	REC	1	10/11/2007 4:19:55 PM
EPA METHOD	8021B: VOLATILES						Analyst: NSB
Benzene		ND	1.0	μg	I/L	1	10/11/2007 4:19:55 PM
Toluene		ND	1.0	μg	ı/L	1	10/11/2007 4:19:55 PM
Ethylbenzene		ND	1.0	μg	ı/L	1	10/11/2007 4:19:55 PM
Xylenes, Total		ND	2.0	þg	J/L	1	10/11/2007 4:19:55 PM

70.2-105

85.8

%REC

Qualifiers:

Surr: 4-Bromofluorobenzene

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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22-Oct-07

Hall Environmental Analysis Laboratory, Inc.

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Lab Order:	0710204			• 3			
Client:	San Juan Refining			•	DATES R	LEPORT	
Project:	GAC 4TH QTR						
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0710204-01A	GAC Inlet	10/9/2007 1:10:00 PM	Aqueous	EPA Method 8015B: Diesel Range	14088	10/16/2007	10/16/2007
				EPA Method 8015B: Gasoline Range	R25530		10/11/2007
				EPA Method 8015B: Gasoline Range	R25530		10/11/2007
				EPA Method 8021B: Volatiles	R25530		10/11/2007
				EPA Method 8021B: Volatiles	R25530		10/11/2007
0710204-02A	GAC Lead	10/9/2007 1:00:00 PM		EPA Method 8015B: Diesel Range	14088	10/16/2007	10/16/2007
				EPA Method 8015B: Gasoline Range	R25530		10/11/2007
				EPA Method 8021B: Volatiles	R25530		10/11/2007
0710204-03A	GAC Lag	10/9/2007 12:45:00 PM		EPA Method 8015B: Diesel Range	14088	10/16/2007	10/16/2007
				EPA Method 8015B: Gasoline Range	R25530		10/11/2007
				EPA Method 8021B: Volatiles	R25530		10/11/2007

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Page 1 of 1

Client: San Jua Project: GAC 4	n Refining TH QTR						Woi	<b>k Order:</b> 0710204
Analyte	Result	Units	PQL	%Rec	LowLimit Hi	ghLimit	%RPD R	PDLimit Qual
Method: EPA Method 801	5B: Diesel Range	MBLK			Batch ID	14088	Analysis Date	10/16/2007 2:05:10 PM
Diesel Range Organics (DRO Motor Oil Range Organics (M Surr: DNOP	) ND RO) ND 1.166	mg/L mg/L mg/L	1.0 5.0 0	117	58	14000		10/10/2007 2:00:10 11
Sample ID: LCS-14088 Diesel Range Organics (DRO Surr: DNOP	) 5.655 0.5484	<i>LCS</i> mg/L mg/L	1.0 0	113 110	Batch ID: 74 58	<b>14088</b> 157 140	Analysis Date	10/16/2007 2:40:42 PM
Sample ID: LCSD-14088 Diesel Range Organics (DRO Surr: DNOP	) 6.305 0.5884	LCSD mg/L mg/L	1.0 0	126 118	Batch ID: 74 58	<b>14088</b> 157 140	Analysis Date 10.9 0	10/16/2007 3:15:59 PM 23 0
Method: EPA Method 801 Sample ID: 0710204-03A M	5B: Gasoline Ran SD	ge MSD			Batch ID:	R25530	Analysis Date	10/11/2007 8:19:47 PM
Gasoline Range Organics (GI Surr: BFB Sample ID: 5ML RB	RO) 0.4132 21.61	mg/L mg/L <i>MBLK</i>	0.050 0	82.6 108	80 79.2 Batch ID:	115 121 <b>R25530</b>	3.33 0 Analysis Date	8.39 0 : 10/11/2007 8:41:40 AM
Gasoline Range Organics (Gl Surr: BFB Sample ID: → 2.5UG GRO LC	RO) ND 18.75 S	mg/L mg/L LCS	0.050 0	93.8	79.2 Batch ID:	121 <b>R25530</b>	Analysis Date	: 10/11/2007 8:49:47 P
Gasoline Range Organics (Gl Surr: BFB Sample ID: 0710204-03A M	RO) 0.4718 22.30 <b>S</b>	mg/L mg/L <i>MS</i>	0.050 · 0	90.9 112	80 79.2 Batch ID:	115 121 <b>R25530</b>	Analysis Date	: 10/11/2007 7:49:43 PM
Gasoline Range Organics (Gl Surr: BFB	RO) 0.4272 22.01	mg/L mg/L	0.050 0	85.4 110	80 79.2	115 121		

## QA/QC SUMMARY REPOR

#### Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Work Order:

## **QA/QC SUMMARY REPOR**

ient: **Project:** 

ماند و اد

San Juan Refining GAC 4TH QTR

Project: GAC 4TH (	QTR						We	ork Order	: 0710204
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B:	Volatiles						······································		
Sample ID: 0710204-03A MSD		MSD			Batch	ID: R25530	Analysis Dat	e: 10/11/	2007 8:19:47 PM
Benzene	6.004	µg/L	1.0	107	85.9	113	2.08	27	
Toluene	38.42	µg/L	1.0	96.0	86.4	113	2.91	19	
Ethylbenzene	7.640	µg/L	1.0	96.7	83.5	118	3.14	10	
Xylenes, Total	43.70	µg/L	2.0	95.0	83.4	122	3.26	13	
Surr: 4-Bromofluorobenzene	19.79	µg/L	0	99.0	70.2	105	0	0	
Sample ID: 5ML RB		MBLK			Batch	ID: <b>R25530</b>	Analysis Dat	e: 10/11/	2007 8:41:40 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xyienes, Total	ND	µg/L	2.0						
Surr: 4-Bromofluorobenzene	17.09	µg/L	0	85.4	70.2	105			
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: <b>R25530</b>	Analysis Dat	e: 10/11/	2007 9:49:42 PM
Benzene	20.51	µg/L	1.0	103	85.9	113			
Toluene	19.82	µg/L	1.0	99.1	86.4	113			
Ethylbenzene	19.44	µg/L	1.0	97.2	83.5	118			
Xylenes, Total	57.97	µg/L	2.0	96.6	83.4	122			
Surr: 4-Bromofluorobenzene	19.40	µg/L	0	97.0	70.2	105			
mple ID: '0710204-03A MS		MS			Batch	ID: <b>R25530</b>	Analysis Dat	e: 10/11/	2007 7:49:43 PM
Benzene	6.130	µg/L	1.0	109	85.9	113			
Toluene	39.55	μg/L	1.0	98.9	86.4	113			
Ethylbenzene	7.884	µg/L	1.0	99.8	83.5	118			
Xylenes, Total	45.14	μg/L	2.0	98.1	83.4	122			
Surr: 4-Bromofluorobenzene	20.09	µg/L	0	100	70.2	105			

#### Qualifiers:

Е Value above quantitation range

- Analyte detected below quantitation limits J
- R RPD outside accepted recovery limits

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

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S Spike recovery outside accepted recovery limits

Sample Receipt Checklist

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Client Name SJR	•		- <b>F</b>	Date and Tim	ne Received:		10/1	0/2007
Work Order Number 0710204				Received b	y TLS			
			, , , , ,	-1				
Checklist completed b				0F				
,		I						
Matrix	Carrier name	<u>Clier</u>	nt drop-off					
Shipping container/cooler in good condition?	· · · ·	Yes		No 🗔	Not Present			
Custody seals intact on shipping container/coole	er?	Yes		No	Not Present		Not Shipped	
Custody seals intact on sample bottles?		Yes		No 🗌	N/A	$\checkmark$		,
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 🗌				
Water - VOA vials have zero headspace?	No VOA vials sub	mitted		Yes 🗹	No 🗔			
Water - Preservation labels on bottle and cap m	atch?	Yes		No 🗌	N/A 🔽			
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🗹			
Container/Temp Blank temperature?			<b>4</b> °	4° C ± 2 Accep	otable			
COMMENTS:			I	f given sufficie	ent time to cool.			
					1			
Client contacted	Date contacted:			Pe	erson contacted			
Contacted by	Begarding							
			<u></u>		<u>.</u>			
Comments:				·				
							····	
	<u></u>							<u> </u>
Corrective Action	<u></u>				<u> </u>			
••••••••••••••••••••••••••••••••••••••								

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	4301 Hawkins INE, Suite U Albuquerque, New Mexico 87109	Tel. 505.345.3975 Fax 505.345 www.hallenvironmental.com		ANALYSIS REGUEST		5) 0 <sup>4</sup> )	808) s, S <sup>, r</sup> 0d	") \	08 bo aleats 1, NO 5 100 100 2 2 100 2 2 2 2 2 2 2 2 2 2 2 2	Meth 8 Me 5 (F, C 7est 7est 7est 7 8 (VC	) 703 0158 4977 7808 1808 1808 1808 18260										
					(Á)	10 91 (1 <del>9</del> (19)	<del>308) e'</del> rilozeði eeiÚ\ze	14 1) 8 1) 28 (C 16H (	+ 381 + 381 19 bo	+ <b>M</b> eth Meth Meth H	BTEX BTEX BTEX	$\times$	$\downarrow$ $\downarrow$	XX						Remarks:	
QA/ QC Package:	Uther:	Project Name: HA QTR	(J.HC	Project #:		Project Manager:	Cinder the bade	Sampler: Acher KEAK.ge	Sample Temperature:	Preservative	Number/Volume H9Cl <sub>2</sub> HNO <sub>3</sub> HC/ O410204	4-VOA X 1	4-VOA X 2	4- VOA X 3						Beceived By: (Signature) 10/10/07	Checeivéd By: (Signature)
custony recorn		Υ.	MAN KELINING	22 4990	The AIM 87413			1914-029	11/2-529		Matrix Sample I.D. No.	HAD GAE INIET	1 GAC Lead	1 GAC LAG	æ					Reprovished By: (Siggrature)	Relinquished By: (Signature)
		Litent Control	SAN JU	Address: オジo C	Bloon			Phone #: 505 - 4	Fax #: 505 -		Uate	10-9-07 110	0;;	) 12:45					-	 0-9-07 2.10	Date: Time: H

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#### COVER LETTER

Thursday, November 15, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC Analysis

Order No.: 0711146

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 11/9/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

Date: 15-Nov-07

# Hall Environmental Analysis Laboratory, Inc.

CLIENT: Project: Lab Order:	San Juan Refining GAC Analysis 0711146		Work Order	Sample Summary
Lab Sample ID	Client Sample ID	Batch ID	Test Name	Collection Date
0711146-01A	GAC-Lead	14379	EPA Method 8015B: Diesel Range	11/8/2007 7:15:00 AM
0711146-01A	GAC-Lead	R26074	EPA Method 8021B: Volatiles	11/8/2007 7:15:00 AM
0711146-01A	GAC-Lead	R26074	EPA Method 8015B: Gasoline Range	11/8/2007 7:15:00 AM
0711146-01A	GAC-Lead	R26061	EPA Method 8021B: Volatiles	11/8/2007 7:15:00 AM
0711146-01A	GAC-Lead	R26061	EPA Method 8015B: Gasoline Range	11/8/2007 7:15:00 AM

CLIENT:	San Juan Refining			Client Sample	ID: GAC-	Lead
Lab Order:	0711146			Collection D	ate: 11/8/2	2007 7:15:00 AM
Project:	GAC Analysis			Date Receiv	ved: 11/9/2	2007
Lab ID:	0711146-01			Mat	trix: AQUI	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range C	Drganics (DRO)	NÐ	1.0	mg/L	1	11/14/2007 11:56:38 AM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	11/14/2007 11:56:38 AM
Surr: DNOP		118	58-140	%REC	1	11/14/2007 11:56:38 AM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: <b>NSB</b>
Gasoline Rang	e Organics (GRO)	ND	0.50	mg/L	1	11/14/2007 8:56:54 PM
Surr: BFB		103	79.2-121	%REC	1	11/14/2007 8:56:54 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Benzene		ND	1.0	µg/L	1	11/14/2007 8:56:54 PM
Toluene		ND	1.0	μg/L	1	11/14/2007 8:56:54 PM
Ethylbenzene		ND	1.0	µg/L	1	11/14/2007 8:56:54 PM
Xylenes, Total		ND	2.0	µg/L	1	11/14/2007 8:56:54 PM
Surr 4-Brom	ofiuorobenzene	93.0	70 2-105	%REC	1	11/14/2007 8:56:54 PM

Date: 15-Nov-07

Qualifiers:

\* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

15-Nov-07

Lab Order:	0711146		·				
Client:	San Juan Refining				DATESR	LEPORT	
Project:	GAC Analysis						
Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	QC Batch ID	Prep Date	Analysis Date
0711146-01A	GAC-Lead	11/8/2007 7:15:00 AM	Aqueous	EPA Method 8015B: Diesel Range	14379	11/13/2007	11/14/2007
				EPA Method 8015B: Gasoline Range	R26074		11/14/2007
				EPA Method 8015B: Gasoline Range	R26061		11/13/2007

11/14/2007 11/13/2007

R26074 R26061

EPA Method 8021B: Volatiles EPA Method 8021B: Volatiles Page 1 of 1

		<b>QA/QU</b>	- SUIVI		KI KEP	OKI		
Client: San Juan Re: Project: GAC Analys	fining is	· · · ·		· ·			Wo	rk Order: 0711146
Analyte	Result	Units	PQL	%Rec	LowLimit I	-lighLimit	%RPD R	PDLimit Qual
Method: EPA Method 8015B: D	iesel Range				Detek I		An aluaia Data	44/42/2007 0:00:00 DM
					Datch IL	). 14379	Analysis Date	. 11/13/2007 9.26:28 PW
Diesel Range Organics (DRO)	ND	mg/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0	110	50	4.40		
Surr: DNOP	1.193	mg/L	U	119	58 Beteb ID	140	Analysis Data	. 44/42/2007 40.02.40 DM
Sample ID: LCS-14379		LUS			Batch IL	14379	Analysis Date	: 11/13/2007 10:02:48 PW
Diesel Range Organics (DRO)	4.615	mg/L	1.0	92.3	74	157		
Surr: DNOP	0.5554	mg/L	0	111	58	140		
Sample ID: LCSD-14379		LCSD			Batch IL	): 14379	Analysis Date	: 11/13/2007 10:37:01 PM
Diesel Range Organics (DRO)	5.362	mg/L	1.0	107	74	157	15.0	23
Surr: DNOP	0.5952	mg/L	0	119	58	140	0	0
Method: EPA Method 8015B: G	asoline Rar	ige						<i>,</i>
Sample ID: 0711146-01A MSD		MSD			Batch ID	): R26061	Analysis Date	: 11/13/2007 6:57:18 PM
Gasoline Range Organics (GRO)	0.5540	ma/L	0 050	106	80	115	1 45	8 39
Surr: BFB	22.13	ma/L	0	111	79.2	121	0	0
Sample ID: 5ML RB		MBLK			Batch ID	R26061	Analysis Date	: 11/13/2007 9:13:32 AM
Gasoline Bange Organics (GBO)	ND	md/l	0.050				,	
Surr BEB *	17.88	ma/l	0.000	89.4	79.2	121		
mple ID: 5ML BB	11.00	MBI K	Ū	00.1	Batch ID	P R26074	Analysis Date	· 11/14/2007 9:31:34 AM
Capaling Range Organize (CRO)	ND	ma/l	0.050				,,	
Surr BEB	21.09	mg/L	0.050	105	70.2	101	•	
Sample ID: 2 5UG GRO LCS	21.03	LCS	U	100	73.2 Batch IΓ	P26061	Analysis Data	· 11/13/2007 2/50-24 DM
	0 5500		0.050	100	Datonite		Analysis Date	. 11/10/2007 2:00:24 1 W
Gasoline Range Organics (GRO)	0.5580	mg/∟	0.050	108	80	115		
Surr: BFB	16.92	mg/L	U	84.6	/9.2	121	Aug. 1 . D. 1	
Sample ID: 2.50G GRO LCS		LUS			Batch ID	R26074	Analysis Date	: 11/14/2007 8:26:26 PM
Gasoline Range Organics (GRO)	0.5360	mg/L	0.050	104	80	115		
Surr: BFB	21.62	mg/L	0	108	79.2	121		
Sample ID: 0711146-01A MS		MS			Batch ID	R26061	Analysis Date:	: 11/13/2007 6:26:57 PM
Gasoline Range Organics (GRO)	0.5460	mg/L	0.050	104	80	115		
Surr: BFB	22.25	mg/L	0	111	79.2	121		

## ALAC STIMMADV DEDADT

#### Qualifiers:

Е Value above quantitation range

Analyte detected below quantitation limits J

R RPD outside accepted recovery limits

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

## **QA/QC SUMMARY REPORT**

Client:	San Juan Refining
Project:	GAC Analysis

Project: GAC Analys	sis		_				Wo	rk Order: 0711146
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD F	≀PDLimit Qual
Method: EPA Method 8021B: V	/olatiles	<u>,</u>						
Sample ID: 0711146-01A MSD		MSD			Batch	ID: <b>R26061</b>	Analysis Date	: 11/13/2007 6:57:18 PM
Benzene	7.220	µg/L	1.0	104	85.9	113	0.639	27
Toluene	45.53	µg/L	1.0	113	86.4	113	1.01	19
Ethylbenzene	10.09	µg/L	1.0	116	83.5	118	0.338	10
Xylenes, Total	54.26	µg/L	2.0	113	83.4	122	0.536	13
Surr: 4-Bromofluorobenzene	20.56	µg/L	0	103	70.2	105	0	0
Sample ID: 5ML RB		MBLK			Batch	ID: <b>R26061</b>	Analysis Date	: 11/13/2007 9:13:32 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Surr: 4-Bromofluorobenzene	16.11	µg/L	0	80.6	70.2	105		
Sample ID: 5ML RB		MBLK			Batch	ID: <b>R26074</b>	Analysis Date	: 11/14/2007 9:31:34 AM
Benzene	ND	µg/L	1.0				•	
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Surr: 4-Bromofluorobenzene	19.06	µg/L	0	95.3	70.2	105		
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R26061	Analysis Date	: 11/13/2007 3:24:57 PM
Benzene	19.57	µg/L	1.0	<del>9</del> 7.8	85.9	113		
Toluene	20.65	µg/L	1.0	102	86.4	113		
Ethylbenzene	20.29	µg/L	1.0	100	83.5	118		
Xylenes, Total	57.84	µg/L	2.0	95.1	83.4	122		
Surr: 4-Bromofluorobenzene	20.17	μg/L	.0	101	70.2	105		
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: <b>R26074</b>	Analysis Date	11/14/2007 12:19:41 PM
Benzene	21.01	µg/L	1.0	105	85.9	113		
Toluene	21.60	μg/L	1.0	107	86.4	113		
Ethylbenzene	21.75	μg/L	1.0	107	83.5	118		
Xylenes, Total	62.58	µg/L	2.0	103	83.4	122		
Surr: 4-Bromofluorobenzene	19.82	µg/L	0	99.1	70.2	105		
Sample ID: 0711146-01A MS		MS			Batch	ID: <b>R26061</b>	Analysis Date	11/13/2007 6:26:57 PM
Benzene	7.174	µg/L	1.0	103	85.9	113		
Toluene	45.07	µg/L	1.0	112	86.4	113		
Ethylbenzene	10.05	ug/L	1.0	116	83.5	. 118		
Xvienes, Total	53.97	µg/L	2.0	112	83.4	122		
Surr: 4-Bromofluorobenzene	20.70	µg/L	- 0	104	70.2	105		

- Qualifiers:
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

	Hall Environmental Analysis Labora	tory, Inc.							-						
		Sample Receipt Checklist													
	Client Name SJR					11	/9/2007								
	Work Order Number 0711146				Received by	ARS									
	Checklist completed b Signature	<u></u>		Date	01										
	Matrix	Carrier name	<u>UPS</u>												
							· 								
	Shipping container/cooler in good condition?		Yes		No	Not Present									
	Custody seals intact on shipping container/cooler?		Yes 🛛		No 🗌	Not Present		Not Shipped							
	Custody seals intact on sample bottles?		Yes [		No 🗌	N/A	$\checkmark$	,							
	Chain of custody present?		Yes		No 🗌										
	Chain of custody signed when relinquished and receive	ed?	Yes 🖌		No 🗔										
	Chain of custody agrees with sample labels?		Yes 🛛	2	No										
	Samples in proper container/bottle?		Yes	2	No 🗌										
	Sample containers intact?		Yes 🛛		No 🗌										
	Sufficient sample volume for indicated test?		Yes 🛙		No 🗌										
1	All samples received within holding time?	19 - 19 - 19 - 19 - 19 - 19 - 19 - 19 -	Yes 🔽		No										
494 1947		/OA vials subm	itted	7	Yes 🖌	No									
	Water - Preservation labels on bottle and cap match?		Yes [	7	No	N/A 🔽									
	Water - pH acceptable upon receipt?		Yes [		No 🗌	N/A									
	Container/Temp Blank temperature? COMMENTS:		6°	e 4 If	°C ± 2 Acceptal given sufficient	ble time to cool.									

# 

Date: Time: Relinquished By: (Signature) Date: Time: Relinquished By: (Signature)					11-8-07 7315 Had GAR-Lead	Date Time Matrix Sample I.D. No.	Fax#: 505-632-39/1	Phone #: 505-632 - 4161		Bloomfield, NM87413	Address: #50 CR 4990	Client: SAN JUAN REFINING	Chain-of-Custody Record	
Received By: (Signature)		×			4-10A HC/ 1	Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> HEAL No.	Sample Temperature: 0	Sampler Sob	Project Manager:		Project #:	Project Name:	Std 🖸 Level 4 🗹	QA / QC Package.
Remarks:						BTEX + - F BTEX + W TPH Meth TPH (Met EDB (Met EDC (Met 8310 (PN RCRA 8 M Anions (F, 8081 Pes 8260B (V 8270 (Ser 2000) 8270 (Ser 2000)	ITBE + ad 80° hod 41 hod 50 hod 80 A or P/ etals CI, NO ticides OA) mi-VO/	- TPH ( 15B (G 15B (G 18.1) )4.1) )21) (4.1) (21) (4H) (3, NO <sub>2</sub> , (7 PCB) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	's (8021) Gasoline O as/Diesel) PO <sub>4</sub> , SO <sub>4</sub> ) 's (8082) 's (8082)	nly)		Tel. 505,345,3975 Fax 505,345,4107 www.hallenvironmental.com	ANALYSIS LABORATORY 4901 Hawkins NE, Suite D	

## RIVER TERRACE VOLUNTARY CORRECTIVE MEASURES BIOVENTING SYSTEM SEMI-ANNUAL REPORT

January 2007 through June 2007



SAN JUAN REFINING COMPANY GIANT – BLOOMFIELD REFINERY SUBMITTED: AUGUST 2007


August 24, 2007

## Certified Mail: 7006 0810 0003 7020 6219 7006 0810 0003 7020 6226

Hope Monzeglio New Mexico Environmental Department Hazardous Waste Bureau 2905 Rodeo Park Drive East Bldg 1 Santa Fe, NM 87505 Wayne Price New Mexico Oil Conservation Division Environmental Bureau 1220 South St. Francis Dr Santa Fe, NM 87505

## Re: River Terrace Voluntary Corrective Measures Bioventing System Semi-Annual Report January 2007 through June 2007

Dear Hope and Wayne,

Giant Refining Company, Bloomfield Refinery submits the River Terrace Voluntary Corrective Measures Bioventing System Semi-Annual Report as requested by NMED. This report summarizes data gathered during the first six months of 2007(January 2007 to June 2007).

If you have questions or would like to discuss any aspect of the report, please contact me at (505) 632-4171.

Sincerely,

James R. Schmaltz Environmental Manager San Juan Refining Company Bloomfield Refinery

Cc: Robert Wilkinson, USEPA – Region VI Brandon Powell, NMOCD Aztec District Office Ed Riege, Environmental Superintendent – Giant Refinery

## RIVER TERRACE VOLUNTARY CORRECTIVE MEASURES BIOVENTING SYSTEM SIX MONTH REPORT

January 2007 through June 2007

Owner:

San Juan Refining Company 23733 North Scottsdale Road Scottsdale, Arizona 85255 (parent corporation)

(postal address)

(physical address)

Operator:

Giant Refining Company P.O. Box 159 Bloomfield, New Mexico 87413

Giant Refining Company #50 Rd 4990 Bloomfield, New Mexico 87413

Facility Name: Bloomfield Refinery

US EPA ID NMD089416416

SIC Code 2911

Submittal Date: August 27, 2007

## Section \_Title 1.0 **Executive Summary** 2.0 Introduction Scope of Activities 3.0 4.0 Regulatory Criteria / Groundwater Cleanup Standards 5.0 Monitoring Results 6.0 Summary Maps 7.0 8.0 Field Methods 9.0 **Chemical Analytical Program** Chemical Analytical Reports 10.0

## CONTENTS

# Section 1.0 Executive Summary

## **Executive Summary**

## **River Terrace Bioventing System**

On-going sampling at the River Terrace area is conducted in accordance with the approved Bioventing System Monitoring Plan, dated October 28, 2006, and in accordance with an NMED comment letter dated June 13, 2007.

A facility plot plan and river terrace project plot plan are provided in Section 7.0

The bioventing system was installed to provide oxygen to the subsurface and support aerobic biodegradation of petroleum hydrocarbons that were identified in soil along the western portion of the river terrace. The project includes a dewatering system to provide an increased vadose zone for bioremedial activity.

Quarterly analysis of the groundwater and soil gas of the TP, DW, and MW wells provide periodic progress information of the bioventing system. Performance monitoring offers periodic feedback of remediation operation and GAC filter capability. An in situ respiration test was not performed in May 2007 due to high flow rates of the San Juan River and the inability to duplicate similar conditions as the May 2006 respiration test. The in situ respiration test has been tentatively scheduled for September 2007.

Field data collected during the first six months of 2007 indicate the bioventing system is continuing to enhance bioremedial activity within the river terrace area. Soil gas concentrations collected in the field show that the bioventing system provides sufficient oxygen supply to fully oxygenate the subsurface, supporting aerobic biodegradation of hydrocarbons. These results suggest that as treatment progresses, petroleum hydrocarbon concentrations will diminish. Breakthrough of the lead GAC filter occurred in April 2007.

Section 2.0

Introduction

## INTRODUCTION

Owner:	San Juan Refining Company 23733 North Scottsdale Road Scottsdale, Arizona 85255	(parent corporation)
Operator:	Giant Refining Company P.O. Box 159 Bloomfield, New Mexico 87413	(postal address)
	Giant Refining Company #50 Rd 4990 Bloomfield, New Mexico 87413	(physical address)
Facility Name:	Bloomfield Refinery #50 Rd 4990 Bloomfield, New Mexico 87413	(physical address)
Facility Status	Corrective Action/Compliance	
US EPA ID	NMD089416416	
SIC Code	2911	

River Terrace Voluntary Corrective Measures – Assess and Provide Periodic Progress Information Purpose of Monitoring:

Type of Monitoring:

Periodic Groundwater and Soil Vapor Monitoring



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## BACKGROUND INFORMATION

## SITE LOCATION AND DESCRIPTION

The Bloomfield Refinery is a crude oil refining facility with a crude capacity of 18,000 barrels per day. It is located approximately 1 mile south of Bloomfield, New Mexico, in San Juan County, latitude N36 41' 87", longitude W107 58' 70". It is further located approximately ½ mile east of State Route 550 on Count Road 4990 (a.k.a. Sullivan Road).

The refinery is located on a bluff 120 feet above the south side of the San Juan River. The top of the bluff is relatively flat and is at an elevation of 5,540 feet above sea level. The geological units that comprise the site include, in order of increasing depth, San Juan River Alluvium, Quaternary apron deposits, Aeolian sand and silt, Jackson Lake Terrace, and the Tertiary Nacimiento Formation. An unnamed arroyo flows toward the San Juan River on the southern and western edges of the site. East of the site, a welldefined arroyo cuts a small canyon from the bluff to the San Juan River. Hammond Ditch lies on the bluff between the limit of the Jackson Lake Terrace and the refinery.

Refinery offices are on the western end of the facility, along with warehouse space, maintenance areas, and a storage yard containing used material (e.g., pipes, valves). Petroleum processing units, located in the northwest portion of the refinery, include the crude unit, fluidized cracking unit, catalytic polymerization unit, and hydrodesulfurization unit. The API Separator is located in the northwestern portion of the site. The aeration lagoons are located in the north central section of the refinery.

In the central portion of the site, aboveground storage tanks (AST's) occupy a large percentage of refinery property. South of the refinery and across Sullivan Road are terminals for loading product and off-loading crude, as well as gas storage and hazardous waste storage.

Western Refining merged with San Juan Refining Company (SJRC) May 31, 2007. Currently SJRC is the parent corporation but will become Western Refining Bloomfield, Inc by the end of September 2007. The refinery is operated by Giant Refining Company. The historical and current activities conducted at the refinery are petroleum processing, crude and product storage, crude unloading and product loading, waste management (closed and existing facilities), and offices and non-petroleum material storage





## HISTORY OF RIVER TERRACE

## 1999

Sheet piling was installed along with a bentonite slurry wall adjacent to the San Juan River, at the River Terrace, in order to intercept a small hydrocarbon seep that had been detected in the area.

## 2004

MW #48 & MW #49 and 8 temporary piezometers were installed to launch a River Terrace Investigation. Several temporary piezometers were drilled on the north side of Hammond Ditch to chart the Naciemento Formation. The development of a slurry wall that will be constructed on the north side of Hammond Ditch to prevent the spread of hydrocarbons to the San Juan River was initiated.

#### 2005

The North Boundary Barrier Wall installation was completed March 2005. In April, five more temporary piezometers were installed at the River Terrace. Dewatering Wells #1 and #2 and thirteen bioventing wells were drilled in August at the River Terrace. Construction of the River Terrace Bioventing Project was initiated in August. The system was put on-line in January 2006.

#### 2006

System monitoring began in January abiding by the guidelines from the River Terrace Voluntary Corrective Measures Monitoring Plan approved by OCD and NMED. The In-Situ Respiration test was conducted in May 2006. Quarterly performance monitoring was carried out in March, June, September, and December of 2006.

#### .2007

The dewatering pumps failed and were replaced in February. Breakthrough in the lead GAC (V-612) was detected in April at which time it was taken out of service and V-611 became the lead GAC. V-612 was replaced and back in service in June as the lag filter. Quarterly performance monitoring for the Bioventing System occurred in February and June.

Section 3.0 Scope of Activities

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## **Scope of Activities**

The River Terrace Bioventing Project was put on-line in January 2006 at which time the Voluntary Corrective Measure Bioventing Monitoring Plan was followed. Baseline monitoring and performance monitoring that occurred before 2007 is documented in the River Terrace Voluntary Corrective Measures Bioventing System Six-Month Report January 2006 through June 2006 and also in the River Terrace Voluntary Corrective Measures Bioventing System Annual Report January 2006 through December 2006.

The NMED letter from June 13, 2007 (Direction to Modify Future Monitoring as reported in the River Terrace Voluntary Corrective Measures Bioventing System Annual Report January 2006 through December 2006) revised the monitoring plan to include additional metals analysis and incorporate quarterly sampling of TP-7. These revisions were implemented during the second quarter sampling event.

Prior to the 2006 third quarter sampling event TP-#4 was inadvertently destroyed by a trackhoe that was cleaning out the freshwater inlet pond adjacent to TP-#4's location.

## **Performance Monitoring**

On-going performance monitoring activities continued on a quarterly basis to assess the progress of the remediation system in reducing fuel hydrocarbons. Laboratory analysis of groundwater, treated groundwater, and soil gas are included in the on-going performance monitoring. In addition, certain field parameter data are collected using portable gauges and gas meters.

Section 5.0 of this report summarizes the field parameters and samples obtained during routine performance monitoring.

#### Pressure Readings

Pressure readings were collected from each of the TP wells (TP-7 was not measured in the first quarter), MW #49, and DW #1 were also measured using a hand-held Magnahelic gauge connected to the sample port at the top of each well. Injection pressure and flow rates were also taken from all bioventing wells (BV wells).

This data is available in Section 5.0 Tab 1 and Tab 4 in this report.

#### Groundwater

First quarter groundwater samples were collected from each of the TP Wells (except TP-7), DW #1, and MW #49 during the week of February 26, 2007. Groundwater samples were analyzed for BTEX and MTBE (EPA Method 8021B), GRO and DRO (EPA Method 8015B). MW #49 and DW #1 were also analyzed



for Total Lead, Chromium, and Mercury (EPA Method 6010C and 7470). Field measurements included temperature, pH, conductivity, DO, and ORP.

Second quarter sampling occurred during the week of June 18, 2007. TP-7 was included in this sampling regimen per the June 13, 2007 NMED letter (Direction to Modify Future Monitoring as reported in the River Terrace Voluntary Corrective Measures Bioventing System Annual Report January 2006 through December 2006 – Item #2). TP-7 was sampled after a 24 hour recharge time. In the same letter, NMED required additional metals analysis of all the TP Wells, MW #49, and DW #1 on a quarterly basis for lead and on an annual basis for chromium and barium. Annual analysis of chromium and barium (EPA Method 6010B) was conducted in the second quarter event. Lead analysis (EPA Method 6010B) was performed on all of the TP Wells, MW #49, and DW#1. DW #1 also received an analysis for mercury (EPA Method 7470). In addition, groundwater samples were analyzed for BTEX and MTBE (EPA Method 8021B), GRO and DRO (EPA Method 8015B). Field measurements included temperature, pH, conductivity, DO, and ORP.

A summary of the groundwater monitoring results can be found in Section 5.0 Tab 2 and Tab 3.

## Soil Gas

First quarter samples were collected from each of the TP Wells (except TP-7), DW #1, and MW #49 during the week of February 26, 2007. Soil gas analysis included BTEX (8021B) and GRO (8015B). Field measurements of gas hydrocarbons (using a PID) and oxygen and carbon dioxide concentrations (using a multi-gas meter) were taken. The second quarter monitoring event utilized the same collection sites (with the addition of TP-7), methods, and parameters. Second quarter samples were collected the week of June 18, 2007.

A summary of the soil gas monitoring results can be found in Section 5.0 Tab 1.

## **GAC Filter Monitoring**

Extracted groundwater from the dewatering wells is treated prior to discharge to the raw water ponds, located within the east portion of the refinery. Extracted groundwater is pumped through two GAC filters positioned in series for removal of dissolved-phase hydrocarbons.

GAC filter sampling includes influent samples from a sample port located upstream of the GAC filters, and effluent samples collected from ports located after each of the lead and lag GAC filters. Monitoring the performance of the GAC filters is necessary to estimate GAC filter change-out frequency.

GAC filter influent samples (GAC Inf) and effluent samples collected downstream of the lag GAC filter (GAC 2 Eff) were collected quarterly. Effluent samples from the lead GAC filter (GAC 1 Eff) were obtained weekly until breakthrough was

detected. Samples were analyzed for BTEX by EPA Method 8021B, GRO and DRO by EPA Method 8015B.

Weekly samples were not available at various times throughout the six-month period from January 2007 through June 2007 due to a variety of operational issues. Causes and dates are as follows; January 11, 2007 to February 6, 2007 due to both dewatering pumps broke down and subsequent replacement of both pumps, the week of March 3, 2007 due to a break and repair of discharge piping, the week of March 26, 2007 the river pumps were down due to an extremely muddy San Juan River, and the week of April 12, 2007 the river pumps were down due to the refinery's fresh water ponds were full.

Break through in the lead GAC was detected in April through lab analysis and V-612 was bypassed and taken out of service on April 30, 2007. V-611 became the lead GAC at that time. Approximately 1,886,500 gallons of groundwater flowed through the filters before breakthrough occurred.

A summary of the GAC filter performance monitoring results is presented in Section 5.0 Tab 5 of this report. Chemical analytical reports are located in Section 10.0 Tab 10 of this report.

## **Field Data Collection**

All water/product levels were measured to an accuracy of 0.01 foot using a Geotech Interface Probe. After determining water levels, purge volumes were calculated.

Soil gas purging and sampling were done before groundwater purging and sampling. After sufficient purging (three well volumes), soil gas samples were collected using the vacuum pump. Field measurements of vapor-phase organics (using a PID meter), oxygen, and carbon dioxide concentrations (using a multigas meter) were recorded using portable field instruments.

Prior to soil gas purging, a YSI 550A Dissolved Oxygen Probe was used to determine dissolved oxygen (DO) levels. At least three well volumes were purged from each well prior to groundwater sampling. Electrical conductance, pH, temperature, and oxidation reduction potential were monitored during purging using an Ultrameter 6P. The wells were considered satisfactorily purged when the pH, E.C., and temperature values did not vary by more than 10 percent for at least three measurements.

Field data and analytical results can be found in Section 5.0 – Tabs 1, 2, 3, 4 and 5.

All purged water was collected and disposed of through the refinery wastewater system.





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Section 4.0

.0 Regulatory Criteria / Groundwater Cleanup Standards

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# TABLE OF NEW MEXICO AND THE U. S. EPA'S GROUNDWATER STANDARDS

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	.ЕРА НА (ррт)
Coneral Pronortios				
General Froperties				
non-aqueous phase liquid (NAPL)	NP			
petroleum				
floating product	NP			
undesirable odor ( a )	NP			
pH (units) ( a )	6 - 9	6.5 - 8.5		
total dissolved solids (TDS) ( a )	1000	500		
turbidity		π		
Biological Contaminants				
giardia lambia	tt	Zero		
legionella	τι	Zero		
total coliform	<5%+	Zero		
viruses	tī	Zero -		
Inorganic Contaminants				
aluminum	5.0 (i)	0.05 - 0.2 ( a )		,
ammonia				30
antimony		0.006	0.006	
arsenic	0.1	0.05	.0.05	
asbestos-fibers/liter (longer than 10 um)		7 million	7 million	
barium	1.0	2	2	
beryllium		0.004	0.004	
boron	0.75(i)			0.06
bromate		0.01 (p)	Zero ( p )	
cadmium	0.01	0.005	0.005	
chlorate				0.01

22.00

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPAHA (ppm)
chloride ( a )	250	250 ·		0.01
chlorine				1
chlorine dioxide				80.0
chlorite		1.0(p)	0.08(p)	
chromium	0.05	0.1	0.1	
cobalt ( i )	0.05			
copper		1.3 (al)	1.3	
cyanide	0.2	0.2	0.2	
fluoride	1.6	4.0		
fluoride (a)		2 .		
iron ( a )	1.0	0.3		
lead	0.05	0.015 ( al )	Zero	
manganese ( a )	0.2	0.05		
mercury	0.002	0.002	0.002	
molybdenum	1.0 ( i )		· .	0.05
nickel	0.2 (i)	0.1	0.1	· • .
nitrate - N	10	10	10	
nitrite - N		]	1	
nitrate + nitrite ( as N )		10	10	
selenium	0.05	0.05	0.05	•
silver	0.05	0.05	0.05	
silver ( a )	· · · · · · · · · · · · · · · · · · ·	0.1		· ,
sodium			- -	20
strontium				17
sulfate	600 ( a )	250(a)/400 p)	( 400	
thallium		0.002	0.0005	
vanadium				0.02
zinc ( a )	10.0	5		
Radioactive Contaminants				
		·		× .
Gross alpha (pCi/L) *		15	Zero	
Gross beta & photon emitters (mrem/	VT) **	. 4 .	Zero	

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18 18 18	Same -	
	-	

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
radium 226 (pCi/L)		20(p)	Zero	
radium 228 (pCi/L)		20(p)	Zero	
radium 226 + 228 (pCi/L)	30	5	Zero	
radon 222 (pCi/L)		300(p)	Zero	
uranium	5	0.02(p)	Zero	
Benzenes				•
benzene	0.01	0.005	Zero	
Alkyl Benzenes				
methylbenzene (toluene)	0.75	l(p)/0.04(a	) 1	
ethylbenzene	0.75	0.7 (.p.)/0.03 ( a.)	0.7	
dimethyl benzene isomers (xylenes)	0.62	10(p)/0.02( )	<sup>a</sup> 10	
vinylbenzene (styrene)		0.1	0.1	
trimethyl benzene isomers		÷		
propyl benzene isomers				
butyl benzene isomers				
Chlorinated Benzenes				
· chlorobenzene	tox	0.1	0.1	
o-dichlorobenzene	tox	0.6	0.6	
m-dichlorobenzene	tox			
p-dichlorobenzene	tox	0.075(p)/ 0.005 (a)	0.075	
1,2,4-trichlorobenzene		0.07	0.07	
1,3,5-trichlorobenzene				0.04
1,2,4,5-tetrachlorobenzene	tox			
pentachlorobenzene	tox			
hexachlorobenzene	tox	0.001	Zero	
Toluenes	、 、			
o-chlorotoluene				0.1
p-chlorotoluene				0.1
2,4-dinitrotoluene (2,4-DNT)	tox		-	

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPAHA (ppm)
2,4.6-trinitrotoluene (TNT)				0.002
isopropyltoluene				
Nitrogenated Benzenes			4 .	
aminobenzene (aniline)				. •
nitrobenzene	tox	· · · · ·	,	· · · ·
1,3-dinitrobenzene				0.001
Phenols (hydroxybenzenes)	0.005(a)			,
phenol (carbolic acid)	tox			4
2-chlorophenol				0.04
2,4-dichlorophenol	tox			0.02
2,4-dinitro-o-creosol	τοχ			
2,4-dimethylphenol				
2-methylphenol				
4-methylphenol				
2-nitrophenol				
dinitrophenols	τοχ			
2,4,5-trichlorophenol	tox		• •	
2,4,6-trichlorophenol	tox			
2,4,6-trichlorophenol	tox			
pentachlorophenol	tox	0.001(p)/0.03 (a)	Zero	
p-cresol				
Polycyclics			i	
acenapthene			· ·	
anthracene	tox			
benz(a)anthracene		0.0001(p)	Zero	
benzo(a)pyrene	0.0007	0.0002	Zero	
benzo(b)fluoranthene		0.0002(p)	Zero	
benzo(k)fluoranthene	τοχ	0.0002(p)	Zero	
chrysene		0.0002(p)	Zero	×
dibenz(a)anthracene		0.0003(p)	Zero	
diphenylhydrazine	tox		· · · · · · · · · · · · · · · · · · ·	

|--|--|

PARAMETER	NEW MEXICO (ppin)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
fluoranthene	tox			
fluorene	tox			
indeno(1.2.3-c.d)pyrene		0.0004(p)	Zero	
naphthalene	tox			0.3
naphthalenes ****	0.03			
phenanthrene	tox			
polychlorinated biphenyls (PCBs)	0.001			
PCBs as decachlorobiphenyl		0.0005	Zero	
pyrene	tox			
Methanes				
chloromethane (methyl chloride)	τοχ			0.003
dichloromethane (methylene chloride)	0.1	0.005	Zero	
trichloromethane (chloroform)	0.1		Zero(p)	
tetrachloromethane (carbon tetrachloride)	0.01	0.005	Zero	
bromomethane (methyl bromide)	tox			-0.01
bromochloromethane				0.09
bromodichloromethane	tox		Zero ( p )	
chlorodibromomethane	• • •		Zero ( p )	0.1
tribromomethane (bromoform)	tox		Zero ( p )	
trihalomethanes (THMs) ***		0.1/0.08(p)	Zero	
fluorotrichloromethane (Freon 11)	tox			2
dichlorodifluoromethane (Freon 12)	tox			1
Ethanes			×	
1,2-dibromoethane (ethylene dibromide, EDB)	0.0001	0.00005	Zero	
1.1-dichloroethane	0.025			
1.2-dichloroethane (ethylene dichloride, EDC)	0.01	0.005	Zero	
1.1.1-trichloroethane (TCA)	0.06	0.2	0.2	
1,1,2-trichloroethane	0.01	0.005	0.003	
111,1.2-tetrachloroethane				0.07

r to

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
1,1.2,2-tetrachloroethane	0.01			
hexachloroethane	IOX			
Ethenes (Ethylenes)				
chloroethane (vinyl chloride)	0.001	0.002	Zero	
1,1-dichloroethene	0.005	0.007	0.007	
cis-1,2-dichloroethene	tox	0.07	0.07	
trans-1,2-dichloroethene	tox	0.1	0.1	
trichloroethene (TCE)	0.1	0.005	Zero	
tetrachloroethene (perchloroethylene, PCE)	0.02	0.005	Zero	• •
		× .		
Propanes & Propenes				. · · ·
1.2-dichloropropane (propylene dichloride, PDC)		0.005	Zero	
1,2,3-trichloropropane		·		0.04
1,2-dibromo-3-chloropropane (DBCP)		0.0002	Zero	
dichloropropenes	tox	•		
1,3-dichloropropene	tox			0.01
Aldehydes, Ethers, Furans, & Ketones				
2001010			• • • •	
bis (2 shloroethyl) ether	tox		•	
bis (2-chloroisonronyl) ether	tox			0.3
bis (chloromethyl) ether	tox			
dibenzofuran				
p-dioxane (diethylene dioxide)				0 568
formaldehyde (methanal)			1	1
lisophorone	tox			01
methyl ethyl kerone (MEK 2-bittanone)	10/1			0.1
methyl reniary hutyl ether (MTRE)	01(a)		:	0.04
(memyr centary buryr cutor (wr15D)	U.I. ( 4 )			0.04

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA HA (ppm)
Nitrogamines				
An Osannies				
N-nitrosodiethylamine	tox			
N-nitrosodimethylamine (NDMA)	tox			
N-nitrosodibutyiamine	IOX			
N-nitrosodiphenylamine	tox			
N-nitrosopyrrolidine	tox			
Phthalate Esters				
libutyl phthalate	tóx			
di-2-ethylhexyl phthalate	IOX	0.006	Zero	
diethyl phthalate	tox			
dimethyl phthlate	tox			
Funtaniaa		· .		
Explosives				
dinitrophenols	tox			
2,4-dinitrotoluene (2,4-DNT)	tox			
hexahydro-1.3,5-trinitro-s-triazine (RDX)				0.002
НМХ				0.4
nitroglycerin (glycerol trinitrate)				0.005
nitroguanidine				0.7
2,4,6-trinitrotoluene (TNT)				0.002
Other Organics				
acrolein	tox			
acrylamide		π	Zero	
acrylonitrile	tox			0.004
benzidine	IOX			
chloral hydrate		Ħ(p)	0.04 (p)	
chloramine				0.3

and the second

PARAMETER	NEW MEXICO (ppm) #	EPA MCL (ppm)	EPA MCLG (ppm)	EPA IIA (ppm)	
dibromoacetonitrile		•		0.02	
dichloroacetic acid				0.003	
dichloroacetonitrile				0.006	
dichlorobenzidine	tox				
di(2-ethylhexyl)adipate		0.4	0.4		
diisopropyl methylphosphonate				0.6	
epichlorohydrin (1-chlor-2,3- epoxypropane)		ti .	Zero		
ethylene glycol (1,2-ethanediol)				7	
Haloacetic Acids ****		0.06(p)	,		
dichloroacetic acid			Zero ( p )		
trichloroacetic acid			0.3(p)		
hexachlorobutadiene	τοχ			0.001	
hexachlorocyclopentadiene	τοχ	0.05 (p)/0.008 (a)	0.05		
n-hexane				4.0	
Other Pesticides					
acifluorfen				0.1	-
alachlor		0.002	Zero		
aldicarb	× <sup>1</sup>	0.003(p)	0.001		
aldicarb sulfone		0.002(p)	0.001		
aldicarb sulfoxide		0.004(p)	0.001		
aldrin	tox			0.001	·
ametryn				0.06	
ammonium sulfamate				2	
arsenal (imazapyr)		· · ·			
atrazine		0.003	0.003		
baygon				0.003	
bentazon			· .	0.02	
bromacil				0.09	
butylate				0.35	
carbaryl				0.7	
carbofuran		0.04	0.04		• •

PARAMETER	NEW MEXICO (ppm)	EPA MCL (ppm)	EPA MCLG (ppm)	EPA H# (ppm)
carboxin		·		0.7
chloramben				0.1
chlordane	tox	0.002	Zero	
chlorothalonil				0.5
chlorpyrifos			-	0.02
cyanazine				0.01
2,4-D (2,4-dichlorophenoxyacetic acid)		0.07	0.07	
daethal				4
dalapon		0.2	0.2	
DDT (dichloro diphenyl trichloroethane)	tox			
4,4'-DDD				
4,4'-DDE				
diazinon				0.0006
dicamba				0.2
dieldrin	tox			0.002
dimethrin				2
dinoseb		0.007	0.007	
dioxin		0.00000005	Zero	
diphenamid				0.2
diguat		0.02	0.02	
disulfoton				0.0003
diuron	·			0.01
endosulfan	tox			
endothall		0.1	0.1	
endrin	τοχ	0.002	0.002	
ethylene thiourea				0.001
fenamiphos				0.002
fluometuron				0.09
fonofos				0.01
glyphosate		0.7	0.7	
heptachlor	tox	0.0004	Zero	
heptachlor epoxide		0.0002	Zero	
hexazinone				0.2
lindane (gamma-BHC)	tox	0.0002	0.0002	

PARAMETER	NEW MEXICO	EPA MCL (ppm)	EPA MCLG (ppin)	EPA HA (ppm)
alpha-BHC	IOX	, , , , , , , , , , , , , , , , , , ,		
beta-BHC	tox		•	
delta-BHC		. •		
malathion				0.2
maleic hydrazide			· ·	4
methomyl				0.2
methoxychlor		0.04	0.04	
methyl chlorophenoxyacetic acid (MCPA)				0.011
methyl parathion	·			0.002
metolachlor				0.1
metribuzin		· .		0.2
oxamyl (vydate)		0.2	0.2	
paraquat	:			0.03
picloram		0.5	0.5	
prometon				0.1
pronamide				0.05
propachlor				0.09
propazine				0.01
propham			,	0.1
simazine	•	0.004	0.004	
2,4,5-T (2,4,5-trichlorophenoxyacetic acid	i)			0.07
tebuthiuron		·		0.5
terbacil			ı	0.09
terbufos				0.0009
toxaphene	τοχ	0.003	Zero	,
2,4,5-TP (silvex)		0.05	0.05	
trifluralin	· · · · · · · · · · · · · · · · · · ·	•		0.005

## Abbreviations

al Action Level that, if exceeded, requires water treatment BHC benzene hexachloride, also called hexachlorocyclohexane DDD 1,1'-(2,2-dichloroethylidene) -bis/4-chlorobenzene DDE 1,1'-(2.2-dichloroetheneylidene) -bis/4-chlorobenzene

HA Health Advisory

HMN octahydro-1.3.5.7-tetranitro-1.3.5.7-tetrazocine

MCL Maximum Contaminant Level

MCLG Maximum Contaminant Level Goal

ma/L milligrams per liter

nirem/vr millirem per year

mrem edepyr dose committed over a 50-year period to a "reference man" from an annual intake rate of 2 liters drinking water per day

MTBE methyl tertiary butyl ether, a synonym for 2-methoxy-2-methyl propane (the standard includes other ether-based gasoline additives)

NP the contaminant shall Not be Present

pCi/L picocuries per liter

tox a numerical standard has not been established, but the contaminant is listed in a narrative standard of "toxic pollutant" defined in WQCC regulations

2.4.5-TP 2,4,5-trichlorophenoxpropionic acid

1! Treatment Technique that public water system operators must adhere to instead of a numerical standard

um micrometer

U.S. EPA Uniter States Environmental Protection Agency

WQCC New Mexico Water Quality Control Commission

## Footnotes

\* The proposed standard excludes radon 222, radium 226 and uranium activity

\*\* This standard excludes radium 228 activity. Units for the existing standard are mrem/vr.

U.S. EPA has proposed to change the units to mrem ede/yr.

\*\*\* The "THMs" standard applies to the sum of chloroform, dichlorobromomethane, dibromochloromethane, and bromoform.

\*\*\*\* This standard applies to the sum of naphthalene and monomethylnaphthalene isomers. \*\*\*\*\* This standard applies to the sum of mono-, di-, and trichloroacetic acids, and mono- and dibromoacetic acids.

Use and Applicability of Standards

All New Mexico standards are adopted by the WQCC except for the MTBE and petroleum (floating product and undesirable odor) standards, which are adopted by the New Mexico Environmental Improvement Board.

U.S. EPA's MCLGs are set at levels that would result in no known or anticipated adverse health effects with an adequate margin of safety. MCLGs do not take treatment costs into considerartion and are not enforceable. Health-based proposed MCLs and final enforceable MCLs are set as close to MCLGs as feasible with use of best technology, treatment techniques and other means. U.S. EPA's HAs serve as informal technical guidance to assist Federal. State and Local officials responsible for protecting public health when emergency spills or contamination situations occur. They are not to be construed as legally enforceable Federal standards and are subject to change as new information becomes available. All HAs listed are for lifetime exposures except for p-dioxane (10 day) and n-hexane (7 year).

## NEW MEXICO ENVIRONMENT DEPARTMENT TPH SCREENING GUIDELINES October 2006

In some instances, it may be practical to assess areas of soil contamination that are the result of releases of petroleum products such as jet fuel and diesel, using total petroleum hydrocarbon (TPH) analyses. TPH results may be used to delineate the extent of petroleum-related contamination at these sites and ascertain if the residual level of petroleum products in soil represents an unacceptable risk to future users of the site. Petroleum hydrocarbons represent complex mixtures of compounds, some of which are regulated constituents and some compounds that are not regulated. In addition, the amount and types of the constituent compounds in a petroleum hydrocarbon release differ widely depending on what type of product was spilled and how the spill has weathered. This variability makes it difficult to determine the toxicity of weathered petroleum products in soil solely from TPH results; however, these results can be used to approximate risk in some cases, depending upon the nature of the petroleum product, the release scenario, how well the site has been characterized, and anticipated potential future land uses. In some cases, site clean up cannot be based solely on results of TPH sampling. The New Mexico Environment Department (NMED) will make these determinations on a case by case basis. If NMED determines that additional data are necessary, these TPH guidelines must be used in conjunction with the screening guidelines for individual petroleum-related contaminants in Table 3 and other contaminants, as applicable.

The screening levels for each petroleum carbon range from the Massachusetts Department of Environmental Protection (MADEP) Volatile Petroleum Hydrocarbons/Extractable Petroleum Hydrocarbons (VPH/EPH) approach and the percent composition table below were used to generate screening levels corresponding to total TPH. Except for waste oil, the information in the compositional assumptions table was obtained from the Massachusetts Department of Environmental Protection guidance document *Implementation of the MADEP VPH/EPH Approach* (October 31, 2002). TPH toxicity was based only on the weighted sum of the toxicity of the hydrocarbon fractions listed in Table 1.

Petroleum Product	C11-C22 Aromatics	C9-C18 Aliphatics	C19-C36 Aliphatics
Diesel #2/ new crankcase oil	60%	40%	0%
#3 and #6 Fuel Oil	70%	30%	0%
Kerosene and jet fuel	30%	70%	0%
Mineral oil dielectric fluid	20%	40%	40%
Unknown oil <sup>a</sup>	100%	0%	0%
Waste Oil <sup>b</sup>	0%	0%	100%

Table 1. 7	ГРН Сот	positional A	Assumptions	in Soil
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Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.



October 2006 Page 1 of 5 A TPH screening guideline was calculated for each of the types of petroleum product based on the assumed composition from Table 1 for petroleum products and the direct soil standards incorporating ceiling concentrations given in the MADEP VPH/EPH Excel spreadsheet for each of the carbon fractions. Groundwater concentrations are based on the weighted sum of the noncarcinogenic toxicity of the petroleum fractions.

Method 1 from the MADEP VPH/EPH document was applied, which represents generic cleanup standards for soil and groundwater. Method 1 applies if contamination exists in only soil and groundwater. The MADEP VPH/EPH further divides groundwater into standards. Standard GW-1 applies when groundwater may be used for drinking water purposes. GW-1 standards are based upon ingestion and use of groundwater as a potable water supply. The TPH screening guidelines for sites with potable groundwater are presented in Table 2a.

Petroleum Product	Residential Direct Exposure (mg/kg)	Industrial Direct Exposure (mg/kg)	Concentration in Groundwater (mg/L)	
Diesel #2/crankcase oil	520	1120	1.72	
#3 and #6 Fuel Oil	440	890	1.34	
Kerosene and jet fuel	760	1810	2.86	
Mineral oil dielectric fluid	1440	3040	3.64	
Unknown oil <sup>a</sup>	200	200	0.2	
Waste Oil	2500	5000	Petroleum-Related Contaminants	
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants	

#### Table 2a. TPH Screening Guidelines for Potable Groundwater (GW-1)

Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

The second standard is GW-2, which is applicable for sites where the depth to groundwater is less than 15 feet from the ground surface and within 30 feet of an occupied structure. The structure may be either residential or industrial. GW-2 standards are based upon "inhalation exposures that could occur to occupants of the building impacted by volatile compounds, which partition from the groundwater" (MADEP 2001). The GW-2 screening guidelines ONLY apply for the evaluation of inhalation exposures. If potential ingestion or contact with contaminated soil and/or

groundwater could occur, then the screening guidelines provided in Table 2.a should be applied. Table 2.b lists the TPH screening guidelines for the inhalation scenario.

ТРН				
Petroleum Product	Residential Direct Exposure (mg/kg)	Industrial Direct Exposure (mg/kg)	Concentration in Groundwater (mg/L)	
Diesel #2/crankcase oil	880	2200	30.4	
#3 and #6 Fuel Oil	860	2150	35.3	
Kerosene and jet fuel	940	2350	15.7	
Mineral oil dielectric fluid	1560	3400	10.4	
Unknown oil <sup>a</sup>	800	2000	50.0	
Waste Oil	2500	5000	Petroleum-Related Contaminants	
Gasoline	Not applicable	Not applicable	Petroleum-Related Contaminants	

# Table 2b. TPH Screening Guidelines – Vapor Migration and Inhalation of Groundwater (GW-2)

Sites with oil from unknown sources must be tested for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs) to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Compositional assumption for waste oil developed by NMED is based on review of chromatographs of several types of waste oil. Sites with waste oil must be tested for VOCs, SVOCs, metals, and PCBs to determine if other potentially toxic constituents are present. The TPH guidelines in Table 2 are not designed to be protective of exposure to these constituents therefore they must be tested for, and compared to, their individual NMED soil screening guidelines.

Mineral oil based hydraulic fluids can be evaluated for petroleum fraction toxicity using the screening guidelines from Tables 2a and 2b specified for waste oil, because this type of hydraulic fluid is composed of approximately the same range of carbon fractions as waste oil. However, these hydraulic fluids often contain proprietary additives that may be significantly more toxic than the oil itself; these additives must be considered on a site- and product-specific basis (see ATSDR hydraulic fluids profile reference). Use of alternate screening guideline values requires prior written approval from the New Mexico Environment Department. TPH screening guidelines in Tables 2a and 2b must be used in conjunction with the screening levels for petroleum-related contaminants given in Table 3 because the TPH screening levels are NOT designed to be protective of exposure to these individual petroleum-related contaminants. Table 3 petroleum-related contaminants screening levels are based on the *NMED Technical Background Document for Development of Soil Screening Levels, Rev 4.0 (June 2006).* 

The list of petroleum-related contaminants does not include polyaromatic hydrocarbons (PAHs) with individual screening levels that would exceed the total TPH screening levels (acenaphthene, anthracene, flouranthene, flourene, and pyrene). In addition, these TPH screening guidelines are based solely on human health, not ecological risk considerations, protection of surface water, or





October 2006 Page 3 of 5 potential indoor air impacts from soil vapors. Potential soil vapor impacts to structures or utilities are not addressed by these guidelines. Site-specific investigations for potential soil vapor impacts to structures or utilities must be done to assure that screenings are consistently protective of human health, welfare or use of the property. NMED believes that use of these screening guidelines will allow more efficient screenings of petroleum release sites at sites while protecting human health and the environment. Copies of the references cited below are available on the MADEP website at http://www.state.ma.us/dep/bwsc/vph\_eph.htm and the NMED website at http://www.nmenv.state.nm.us/HWB/guidance.html.

	Values for Direct Exposure to Soil		NMED DAF <sup>a</sup> 20 GW	
Petroleum-Related Contaminants	NMED Residential SSL (mg/kg)	NMED Industrial SSL (mg/kg)	Protection (mg/kg in soil)	NMED DAF <sup>b</sup> 1 GW Protection (mg/kg in soil)
Benzene	1.03E+01	2.58E+01	2.01E-02	1.00E-03
Toluene	2.52E+02	2.52E+02	2.17E+01	1.08E+00
Ethylbenzene	1.28E+02	1.28E+02	2.02E+01	1.01E+00
Xylenes <sup>°</sup>	8.20E+01	8.20E+01	2.06E+00	1.03E-01
Naphthalene	7.95E+01	3.00E+02	3.94E-01	1.97E-02
2-Methyl naphthalene	5.00E+02	1.00E+03	<sup>e</sup>	<sup>e</sup>
Benzo(a)anthracene	6.21E+00	2.34E+01	1.09E+01	5.43E-01
Benzo(b)fluoranthene	6.21E+00	2.34E+01	3.35E+01	1.68E+00
Benzo(k)fluoranthene	6.21E+01	2.34E+02	3.35E+02	1.68E+01
Benzo(a)pyrene	6.21E-01	2.34E+00	2.78E+00	1.39E-01
Chrysene	6.15E+02	2.31E+03	3.48E+02	1.74E+01
Dibenz(a,h)anthracene	6.21E-01	2.34E+00	1.04E+01	5.18E-01
Indeno(1,2,3-c,d)pyrene	6.21E+00	2.34E+01	9.46E+01	4.73E+00

Revised Table	3. Petroleum-Related	Contaminants	Screening	Guidelines
		Vultanninanto	OCICCIIIIG	Quiucinica

<sup>a</sup> DAF - Dilution Attenuation Factor

<sup>b</sup> For contaminated soil in contact with groundwater.

° Based upon total xylenes

<sup>d</sup> No NMED value available, value taken from Massachusetts Contingency Plan, 310 CMR 40.0985, 4/3/06.

<sup>e</sup> No NMED value available and leachability-based value for DAF =1 or 20 not established in the Massachusetts Contingency Plan, 310 CMR 40.0985, 4/3/06.

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October 2006 Page 5 of 5

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### Section 5.0 Monitoring Results

Title	Tab Number
Soil Gas Monitoring	
Groundwater Monitoring	2
Groundwater Metals Analysis	3
Bioventing Wells Pressure Reading	4
GAC Analysis	5

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and a second	
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### **RIVER TERRACE**

# Soil Gas Monitoring 2007 - Six Month Report

Sample	Sampling (	рате	Purge: Volume((u)	Depth to Water (ft)	Pressure Littchesiot.Water)	pib R (RRM)	(%) (%) (%)	Carbon bloxide	Bênzênê Bênzênê Bênzênê	Toluënë ( <u>Ug/U</u> )	Elhylben ( <u>ugh</u> )	Xylene (üğlı:)	GRØ (ug/tu)
L# ·	1st Quarter	Week of 2/26/07	14.2	67.7	0.11	1981.0	20.4	0.30	6.1	8.2	150	1200	7300
. qT	2nd Quarter	Week of	10.3	5.67	00.0	301.0	19.0	0,4	<0.1	<0.1	0.3	1.0	7.4
₹# ·	1st Quarter	Week of 2/26/07	16.2	8.86	0.10	8.8	20.6	0.10	<0.10	<0.1	1.1	17	88
वा	2nd Quarter	Week of 6/18/07	13.7	7.5	0.10	112.0	∵ <b>20.1</b>	0.10	č0.1	<0.1	<0.1	1.4	10.0
۶#	1st Quarter	Week of 2/26/07	13.7	7.52	0.00	5.2	20.4	0.10	<0.1	<0.1	0.11	1.2	13
- <b>4</b> T	2nd Quarter	Week of 6/18/07	12.8	7.02	0.00	19.0	20.5	0.10	<0.1	<0.1	<0.1	1.0	7.6
				No. of Concession, Name									
9# ·	1st Quarter	Week of 2/26/07	10.2	5.59	0.00	1268.0	19.8	0.60	<5.0	9.8	23	1,000	6,100
. <b>q</b> T.	2nd Quarter	Week of 6/18/07	12.1	6.62	0.00	1100.0	18.6	1.90	<5.0	<5.0	<5.0	1,500	9,000
9# -	1st Quarter	Week of 2/26/07	6.39	6.39	0.00	29.5	20.2	0.30	<0.2	<0.2	1.0	13	98
ат	2nd Quarter	Week of 6/18/07	13.4	7.32	0.00	25.0	19.2	0.70	<0.1	<0.1	<0.1	<0.3	<5.0
L# -	1st Quarter	Week of 2/26/07	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
qT	2nd Quarter	Week of 6/18/07	6.6	5.4	0.00	35.0	20.6	0.00	<0.1	<0.1	<0.1	1.0	7.0
		Constant Associated											
8# -	1st Quarter	Week of 2/26/07	15.6	8.57	0.05	1775.0	20.4	0.30	<5.0	9.5	130	1400	7100
ЧT	2nd Quarter	Week of 6/18/07	11.3	6.22	0.00	59.0	20.1	0.10	<0.1	<0.1	<0.1	<0.3	.<5.0
の問題を見													
6# -	1st Quarter	Week of 2/26/07	9.2	5.07	0.00	95.1	20.6	ь <b>0.20</b>	<0.1	0.15	4.3	41	290
ЧŢ	2nd Quarter	Week of 6/18/07	8.6	4.73	0.00	24.0	20.6	0.10	<0.1	<0.1	<0.1	0.9	6.6
													大学がないないないのないである
01#	1st Quarter	Week of 2/26/07	9.5	5.23	0.00	3.3	20.4	0.10	<0.1	<0.1	<0.1	0.94	6.0
- <b>d</b> T	2nd Quarter	Week of 6/18/07	8.5	4.62	0.00	38.0	20.6	0.00	<0.1	<0.1	<0.1	1.0	11.0

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Page 1 of 2

**RIVER TERRACE** 

Soil Gas Monitoring 2007 - Six Month Report

新設語			ĩ۵)	1	1	淵			雟			躑		
(1) (ckó (ug/c)	11	7.2		61	6.0		24	5.8		<5.0	<5.0		<5.0	11.0
<ul> <li>Xylené</li> <li>(lg/l)</li> </ul>	1.40	0.74		11	0.56		2.9	0.60		<0.3	0.32		<0.3	<0.3
Ethýběn: (Úg/L)	0.11	<0.1		1.1	<0.1		0.2	<0.1		<0.1	<0.1		<0.1	<0.1
- Toluene - (ug/u)	<0.1	<0.1		<0.1	<0.1		- <0.1	<0.1		<0.1	<0.1		<0.1	<0.1
Benzene (Uĝ/L)	<0.1	<0.1		<0.1	<0.1		<0.1	<0.1		<0.1	<0.1		<0.1	<0.1
ទើងវង់ចំពុំស្រៃសេរជន់ (26)	1.00	0.00		0.20	0.10		0.20	0.00		0.50	1.80		0.60	3.00
(54)	19.0	20.6		20.4	20.6		20.2	20.6		19.8	18.6		19.8	17.4
e p(d) (epM)	5.9	45.0		18.10	26.0		4.10	97.0		1.00	0.6		1.60	64.0
Pressure 1	0.00	0.00		0.00	00.0		0.00	0.00		0.00	0.00		0.00	0.00
Depth to Water (II)	5.69	5.17		7.4	6.82		6.16	5.63		6.11	5.81		8.79	8.41
<ul> <li>Puige:</li> <li>Volume,(b)</li> </ul>	10.4	9.5		13.5	12.5	A DESCRIPTION OF THE OWNER.	11.3	10.3		100.5	95.6		64.4	61.6
DATE DATE	Week of 2/26/07	Week of 6/18/07		Week of 2/26/07	Week of 6/18/07		Week of 2/26/07	Week of 6/18/07		Week of 2/26/07	Week of 6/18/07		Week of 2/26/07	Week of 6/18/07
Sampling.	1st Quarter	2nd Quarter		1st Quarter	2nd Quarter		1st Quarter	2nd Quarter		1st Quarter	2nd Quarter		1st Quarter	2nd Quarter
Isample Location	11#	- 4T		Z1#	- d1		£1#	- d⊥		L# /	wa		67#	мм

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**River Terrace** 

Groundwater Monitoring 2007 - Six Month Report

																	Called 1
			i									A NOCO	Method 802	115 13103 - 324		EFA Metho	ening
			Ľ.	eld Measu	Irements											Guidelines	Tāblē 2a
											1010年 3	1-0:75	25 0:75E	29.0 E	小田には原いた。	今日の日本は町	治理学院理学院開始
Sample	sampling 20	DATE	Depth to Water	Depth to	Total Well		Hd State	TEMP	D.O.	ORP	Benzene	Toluene	Ethylben	Xylene	MTBE	DRO	GRO
Location	Event		(ft below TOC)	(ft:below TOC)	(ft below-TOC)	(umhos/cm)	a strategy a	Sec. (3.)	ត(mg/២) 🗄	(mv) 🧐	(mg/L) [	(mg/L)	(mg/L)	ີ (ເມີຍູກີ) 🔬	(ញឲ្យ)	(mg/L)	(mg/L)
L#	1st Quarter	Week of 2/26/07	67.7	NPP	9.28	3825	6.82	50.3	0.65	134	3,2:00±	<0.1		32.00	<0.25	33.00 (c)	160.00
٩T	2nd Quarter	Week of 6/18/07	5.67	ddN	9.28	4907	6.93	65.9	0.31	185	190 F	<0.1	4.007	2119.00	<0.25	210	70.00
「「「「「「「「」」」	のないと思いたのないのである。	は記録書を行います	の日本になった。	<b>新聞的優男人教授法</b>	の市場のないないないないない	語の言語が現然的な影響	の記述の時代のために	開始などを開放	支援政府政府的	の時期になって		<b>HARDANE</b>	には語るなななな	が見たいである		and the second	記述的調整語
7#	1st Quarter	Week of 2/26/07	8.86	NPP	9.92	3783	6.82	51.4	1.45	171	4:30	<0.1	14:30	19.00	<0.25	2.10 W	94.00
ЧT	2nd Quarter	Week of 6/18/07	7.5	NPP	9.92	2576	6.87	67.5	0.70	191	140	0.32	3.801	15:00	<0.25	<1.0	47.00
The second second second second second second second second second second second second second second second s	如目的和同時間的自由的時期都是	の時期間にある	認識認識理察性的相關意識的	的时间和15年1月1日的时间的15	語言が非常認知能ないです。	ないないないないないないない	的现在分词是	<b>新加速等日的增长的</b>	地名加利尔伊尔利尔	語言語言語言語	語語などの語言	市民にあっている	語言語は記念の話	和科教学的教育	<b>新闻的现在分词</b>		がたいる国際社
8#	1st Quarter	Week of 2/26/07	7.52	ddN	12.35	839	6.89	47.0	1.65	248	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
qī	2nd Quarter	Week of 6/18/07	7.02	NPP	12.35	560	6.85	60.8	3.12	211	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
中国国际部署法	1000年1月1日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日日	ないのないの		11日1日日 11日1日日 11日	<b>这些你的现在是我们的问题</b> 。	いたので、「ない」のないで、	1011年11月1日	STATE OF STATE	「教育学校になる	的名词复数的名词	<b>的现在分词</b>	A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR OF A CONTRACTOR A	<b>新出达了1000年</b> 0	ないないないない	国家の政府にお	語言語を言語	なるなない
<b>9</b> #	1st Quarter	Week of 2/26/07	5.59	ddN	8.84	1027	6.87	49.6	0.79	219	<0.01	<0.01	1:305	18.00	<0.025	<1.0	85.00
ЧT	2nd Quarter	Week of 6/18/07	6.62	ddN	8.84	884	6.87	63.9	0.80	148	0.34	<0.1	3.50	21.00	<0.25	<1.0	78.00
が時代的に変	のないないないないないない	<b>第二十二日三十二日</b>	なる。「「「「「「「」」」」」	<b>生成化和少数</b> 的推进法	王法法律的问题是法王法法	がたいないないないない	語言語ないない	いたなながらいない	時間に正式	埃里斯酸山林	北京の記述語	<b>新西加市地区的</b>	金融市場の市場には	「東京の主義のない」	常此的目的語言的		長を見てきたない
9#	1st Quarter	Week of 2/26/07	6.39	NPP	9.94	1857	6.83	47.5	0.72	253	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	0.28
<b>д</b> Т	2nd Quarter	Week of 6/18/07	7.32	NPP	9.94	1361	6.89	62.2	1.19	220	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	0.11
新行気を読みたい	and the state of the second second second second second second second second second second second second second	の日本の日本の	<b>法的利用的计划的计划的问题</b>	的建筑和建筑建筑建筑建筑	影響的影響的影響的影響	10.15.12.18.19.19.19.19.19.19.19.19.19.19.19.19.19.	是主要的法律和任何	<b>法国际任任</b> 法计论	的政治的建立的	「おいい」の言語を	北京なたないの法	語語が読まる	国际の基本部署があ	一般な新していたの	語言語語言語	法事業が正言語	とない語言語語
۲#	1st Quarter	Week of . 2/26/07	NR	NR	NR	NR	NR	NR	NR	NR	NR	N	NR	RN	R	R	NR
qT	2nd Quarter	Week of 6/18/07	5.4	ЧРР	9.72	2795	6.83	59.2	0.39	222	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	0.05
の日本になって	「「「「「「」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」	時日期ある話を見たい	<b>教授的法律科学的法律和法律</b> 的法律	ないないないのないないである	ながらないないないである	はないないない	10年1月1日日	The second second	<b>王宗汉和王帝</b>	語言語語言語	的复数形式	見るないないないない	中国語語の	ううち の の の の の の の の の の の の の の の の の の	間の日本のための	「「「「「「「「「」」」	小田市市地震地
8#	1st Quarter	Week of 2/26/07	8.57	ЧРР	9.92	2964	6.95	50.5	2.45	208	<0.01	<0.01 48944	1.30	13.00	<0.025	2.10	70.00
۹T	2nd Quarter	Week of 6/18/07	6.22	NPP	9.92	2704	6.92	663	1.21	160	<0.01	<0.01	0.29	0.8.60 Act	<0.025	12025	35.00
東京東京に対応	"这些你们是我们的理论就是你的意思。"	「「「「「「「「「」」」」	国家の設定ないない		1490年14月1日日14月1日14月1日	<b>学们的名词复数的名词</b> 合	語語語語語のな	のないのである	道部の記録開発	は前行に言語を決	学校の学校を	業が高いない	No. of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of the other states of		<b>新学校的新教室</b>	<b>新新学校会会国际政府</b>	に見るないない
6#	1st Quarter	Week of 2/26/07	5.07	NPP	10.97	2379	6.85	46.1	0.85	173	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
dТ	2nd Quarter	Vveek of 6/18/07	4.73	ddN	10.97	2035	6.90	58.5	0.31	224	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05

NPP = No Product Present

Page 1 of 2

NR = Not Required

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**River Terrace** 

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Groundwater Monitoring 2007 - Six Month Report

			Ü	nacolid blo	romonte							<b>MOCC</b>	20NMAC 6.2	13103 Mar		Guidelinas	Table 2a%
											10:01	11 SZ 105	11,0:75 F.	6.0.62 E		<b>E</b> 17220	
					A CONTRACT OF A CONTRACT OF	a second second of the famous	a destruction of the starting of	11 「「「「「「」」」」」」」」」」」」」」」」」」」」」」」」」」」」」」	ALL AND ADDRESS OF	A CARL STATUTE AND A CARL	の一般のないない	の時代の時代の時代の		「「「ない」」	19 19 19 19 19 19 19 19 19 19 19 19 19 1	2 用用物理会的	のないないない
Sample		DATE		Depth to	Total Well		- PH	TEMPS	0.0	ORP	Benzene	Toluene	Ethylben	Xylenë	MTBE	DRO	GRO
	Sampling		Depth to Water	Tri below-TOC)	(ft below TOC)	(umhos/cm)		(CE) %	( <u>mg/L)</u>	(mV)	(mg/u)	(mg/L)	(mg/t)	(mg/L) -	(m <u>ĝ</u> /Ľ).	(Wg/L) X	( <b>mg/L</b> )
	Let Out of a for the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of the former of	Week of	5 23	NPP	9,95	426	6.85	41.1	3.87	233	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
# d1	and Olisiter	Week of 6/18/07	4.62	NPP	9.95	268	6.86	57.2	7.32	213	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
		STATE OF STATE	「「「「「「「」」」」		の市の市場を見たい	の言語がおいていた。	がないないない	の主要のない。	が正正に							あるためまたのは	にいろうなりません
	tet Quarter	Week of	5.69	APP	7.98	540	6.87	44.2	1.45	262	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
# d1	int inthe lot	Week of	1	COIN	7 9.8	378	6.84	62.5	1.69	217	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
and the second second second second	2nd Quarter	0/10/1/				and the second second		議会に議会に知られた	新田田が見たたい	のないないない					がなまたな思想	空間が認める話	「「「「「「「「「」」」」
21		Week of	7 40	, qqN	11.79	952	6.92	48.2	1.73	205	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
# d.	ואר תחמו הבו	Week of			11 79	1750	6.81	56.7	2.04	242	<0.001	<0.001	<0.001	<0.002	0.00	<1.0	<0.05
source and the second	2nd Quarter	6/18/U/	0.82 B			A CONTRACTOR OF STREET					South State	重要な意思が発			社会主要に接続		管理なる
13	1st Duarter	Week of	6.16	ddN	16.09	449	6.97	46.7	1.86	236	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
# d1	2nd Quarter	Week of 6/18/07	5.63	APP .	16.09	563	6.86	56.3	1.43	207	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05
的研究和研究的研究		「日本の学校教授	の語の語言語を見たいたい。	を認定にないまである。	山北部にあるのである	いたが国際の見たの形式	の時間に見たいない。	温水の方法認知は地に	かけたいいななない	なる形式の利止みか	1 Contraction of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of the Party of t	たれなどにおきまたのではないのではない			A A A A A A A A A A A A A A A A A A A	S. then places a failing all the set of	があるいとなったかいであったが
L#	1st Quarter	Week of 2/26/07	6.11	ddN	15.62	3126	6.88	48.1	0.65	235	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	0.29
wa	and Ouarter	Week of 6/18/07	5.81	ddN	15.62	2548	6.75	58.6	4.59	257	<0.001	<0.001	<0.001	0.0026	<0.0025	<1.0	0.15
語語に記述研究で			<b>地积弱的影响。</b> 他们就能够得到	の形式になるのないない。	法国は国家が国家部の対応	三方言語を考えていた。		「「日本ななないない						子が日本語を記述の目的		and the second second	大学にあたいの子子を通信的
617#	1st Quarter	Week of 2/26/07	8.79	NPP	16.99	2568	6.90	48.4	0.73	265	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	0.05
ŧ WW	2nd Quarter	Week of 6/18/07	8.41	ddN	16.99	1217	6.95	57.5	0.49	217	<0.001	<0.001	<0.001	<0.002	<0.0025	<1.0	<0.05

NR = Not Required NPP = No Product Present Page 2 of 2

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Groundwater Monitoring 2007 - Six Month Report

			MINOS SERVICE	Weitzeisenen		MISES INC.	
	Total Matale		MNDS-DODW	Collezio SH			
	I CIGI INICIAIS		1004	0:05	0.015	0:002	
Sample	Sainpling Event	DATE	(mg/L)	ĜĒ (mglu) (	Leád (mg/L)	Mercury (mg/E)	
L#	1st Quarter	Week of 2/26/07	NR	NR	NR	NR	
dТ	2nd Quarter (Annual)	Week of 6/18/07	0.14	<0.006	0.24	NR	
Z#	1st Quarter	Week of 2/26/07	NR NR	NR	NR	NR	
dТ	2nd Quarter (Annual)	Week of 6/18/07	0.29	<0.006	0.07	NR	E
£#	1st Quarter	Week of 2/26/07	NR	NR	NR	NR	PA Me
d⊥	2nd Quarter (Annual)	Week of 6/18/07	0.2	0.008	0.007	NR	thod 6
S#	1st Quarter	Week of 2/26/07	N.C.		NR		5010 8
ЧT	2nd Quarter (Annual)	Week of 6/18/07	. 0.21	<0.006	0.09	NR	7470
9#	1st Quarter	Week of 2/26/07	ЯZ	ÅR	NR	NR	
dТ	2nd Quarter (Annual)	Week of 6/18/07	0.38	<0.006	0.03	NR	
L#	near-sensessessessessessessessessessessessess	Week of 2/26/07	NR	NR	NR	NR	
۲۲	2nd Quarter (Annual)	Week of 6/18/07	0.075	<0.006	<0.005	NR	
- The second second second second second second second second second second second second second second second		Week of					
8#	1st Quarter	2/26/07	YZ	Y N	YN.		
dТ	2nd Quarter (Annual)	Week of 6/18/07	0.44	<0.006	0.054	NR	

NR = Not Required

Page 1 of 2

<b>lonth Report</b>	03 ADIGER 121162 (N
2007 - Six M	WECCZONMAC 6233
vater Monitoring	al Metals
Groundw	Tot

			WOCC ZONN	AAC 623103	4016FR 114	(162 (MCL)
	Total Metals		100	0:05	0.045	0:002
Sample	Sampling Event	DATE	- Ba (mġ/L)	CF (mg/L)	Eead [mg/L]	Mercury (mg/L)
6#	1st Quarter	Week of 2/26/07	NR	NR	NR	NR
ЧT	2nd Quarter (Annual)	Week of. 6/18/07	0.91	0.018	0.020	NR
OL#	1st Quarter	Week of 2/26/07	NR	NR	NR	NR
‡ d⊥	2nd Quarter (Annual)	Week of 6/18/07	0.41	0.024	0.009	NR
	1st Quarter	Week of 2/26/07	NR	NR	NR	NR
‡ d⊥	2nd Quarter (Annual)	Week of 6/18/07	0.33	0.013	0.015	NR
214	1st Quarter	Week of 2/26/07	NR	NR	NR	NR
¥ d1	2nd Quarter (Annual)	Week of 6/18/07	0.21	0.010	0.016	NR
13	1st Quarter and a second second second second second second second second second second second second second se	Week of 2/26/07	NR	NR	NR	NR
¥ dТ	2nd Quarter (Annual)	Week of 6/18/07	0.42	0.019	0.011.	NR
L#	1st Quarter	Week of 2/26/07	NR	<0.006	<0.005	0.002
MO	2nd Quarter (Annual)	Week of 6/18/07	0.93	<0.03	<0.025	<0.0002
67#	1st Quarter	Week of 2/26/07	NR	<0.006	<0.005	NR
ŧ MM	2nd Quarter (Annual)	Week of 6/18/07	0.064	<0.006	<0.005	NR

NR = Not Required

of 2

### **River Terrace**



BV Air Pressure 2007 - Six Month Report

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Sample Location	Sampling Activities	-Date	Time	Velocity (scfm)	Pressure (psi)
BV - 1	1st Quarter	2/26/2007	1344	10.0	2.0
	2nd Quarter	6/18/2007	1123	10.0	2.0
BV - 2	1st Quarter	2/26/2007	1345	9.0	1.9
	2nd Quarter	6/18/2007	1124	4.0	2.0
BV - 3	1st Quarter	2/26/2007	1348	12.0	1.9
	2nd Quarter	6/18/2007	1125	14.0	1.9
BV - 4	1st Quarter	2/26/2007	1347	11.0	1.9
	2nd Quarter	6/18/2007	1003	5.0	2.0
BV - 5	1st Quarter	2/26/2007	1353	12.0	1.9
	2nd Quarter	6/18/2007	1120	14.0	1.9
BV - 6	1st Quarter	2/26/2007	1346	12.0	1.9
	2nd Quarter	6/18/2007	1005	7.0	2.0
BV - 7	1st Quarter	2/26/2007	1351	12.0	2.0
	2nd Quarter	6/18/2007	1121	13.0	1.9
BV - 8	1st Quarter	2/26/2007	1352	12.0	1.9
	2nd Quarter	6/18/2007	1119	14.0	1.9
BV - 9	1st Quarter	2/26/2007	1350	10.0	1.9
	2nd Quarter	6/18/2007	1122	9.0	2.0
BV - 10	1st Quarter	2/26/2007	1354 .	12.0	1.9
·	2nd Quarter	6/18/2007	1118	14.0	2.0
BV - 11	1st Quarter	2/26/2007	1349	12.0	1.9
	2nd Quarter	6/18/2007	1126	8.0	1.9
BV - 12	1st Quarter	2/26/2007	1355	11.0	1.9
	2nd Quarter	6/18/2007	1117	12.0	1.9
BV - 13	1st Quarter	2/26/2007	1356	12.0	2.0
	2nd Quarter	6/18/2007	1116	12	1.9



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i		···		10.75.7534.1219.1217.03.1.5.55.04.19.19.10.10.1	AT				IPTOR COMMONDATION DE
	GAC Fi	Iter Mon	itoring	Ŵ	EPA Metho OCC 20NMA	d 8021B C 6 2 3103		EPA Meth	od 8015B
		2007	•				en an an an an an an an an an an an an an	Se TRHISC	reening
<b>U</b>	Six N	lonth Re	eport	V.	OCC 20NIMA	C 6.2,3103		Guidelines	Tiable 2a
	Samplo	Sompling		Benzene		Ethylben	Xvlene		CRO
	Location	Event		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)'
	GAC INF	1st Quarter	03/13/07	0.230	0.039	0.860	12.900	<1.0	12.00
		2nd Quarter	06/20/07	0.350	<0.02	0.730	0700	1.4	4.80
	GAC 2 EFF		02/20/07	<0.001	<0.001	<0.001	<0.003	<1.0	<0.050
	(V-611) North		02/27/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
	Filter		03/06/07	Pun	nps down due t	o Break and	Repair of Dis	scharge Pipin	ıg
	17 ce 1 is	1st Quarter	03/13/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
	, 200 Servi		03/26/07		Pumps down d	ue to the Sa	n Juan River	Mud Load	
	il 30, t of 5 07. V		04/02/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
	Apri Our Filte		04/12/07		Pumps down b	ecause Fres	h Water Pon	ds are Full	
	e Lead Filter on Ar -612 was Taken O aced on June13, 2 now the Lead Fil		04/16/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
			04/25/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
		Lead Filter	05/02/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
	me L V-63 olace		05/09/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
	fhen d rej		05/15/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
	a < E	2nd Quarter	06/20/07	0.0025	<0.001	0.0015	0.002	<1.0	<0.050
	GAC 1 EFF		01/03/07	<0.001	<0.001	<0.001	<0.003	6.2	0.093
	(V-612)		01/10/07	<0.001	<0.001	<0.001	<0.003	<1.0	<0.050
	South Filter		01/11/07	Dewatering pun	nps at MW #48 a	ind DW #2wer installed 02	e pulled. Purch 2/06/07	nased new pun	nps that were
	ue No		02/08/07	0.003	<0.001	<0.001	<0.003	<1.0	<0.050
	Take 7. N		02/20/07	0.002	<0.001	<0.001	<0.003	<1.0	<0.050
	was 200		02/27/07	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050
	e13,		03/06/07	Pun	nps down due t	o Break and	Repair of Di	scharge Pipir	ıg
	Whe Jun	1st Quarter	03/13/07	0.003	<0.001	<0.001	<0.002	<1.0	<0.050
	007 d on Filte		03/21/07	0.003	<0.001	<0.001	<0.002	1.2	0.051
	30, 2 lace Lag		03/26/07		Pumps down o	lue to the Sa	n Juan River	Mud Load	
	pril ( d rep the		04/02/07	0.014	<0.001	<0.001	<0.002	<1.0	0.071
	ntil A ≥ anc		04/12/07		Pumps down b	ecause Fres	h Water Pon	ds are Full	
	er Ur rvice		04/16/07	0:028	<0.001	<0.001	<0.002	<1.0	0.11
	I Filt		04/25/07	0.014	<0.001	<0.001	<0.002	<1.0	0.074
	Leac Out c	2nd Quarter (Lag Filter)	6/20/087	<0.001	<0.001	<0.001	<0.002	<1.0	<0.050

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Section 6.0 Summary

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### Summary

Construction of the River Terrace Bioventing Project was initiated in August 2005. The system was put on-line in January 2006. On-going sampling at the River Terrace area is conducted in accordance with the approved Bioventing System Monitoring Plan, dated October 28, 2006, and in accordance with an NMED comment letter dated June 13, 2007. The NMED letter revised the monitoring plan to include additional metals analysis and incorporate quarterly sampling of TP-7. These revisions were implemented during the second quarter sampling event.

First quarter groundwater samples were collected from each of the TP Wells (except TP-7), DW #1, and MW #49 during the week of February 26, 2007. Groundwater samples were analyzed for BTEX and MTBE (EPA Method 8021B), GRO and DRO (EPA Method 8015B). MW #49 and DW #1 were also analyzed for Total Lead, Chromium, and Mercury (EPA Method 6010C and 7470). Field measurements included temperature, pH, conductivity, DO, and ORP.

Second quarter sampling occurred during the week of June 18, 2007. TP-7 was included in this sampling regimen per the June 13, 2007 NMED letter (Direction to Modify Future Monitoring as reported in the River Terrace Voluntary Corrective Measures Bioventing System Annual Report January 2006 through December 2006 – Item #2). TP-7 was sampled after a 24 hour recharge time. In the same letter, NMED required additional metals analysis of all the TP Wells, MW #49, and DW #1 on a quarterly basis for lead and on an annual basis for chromium and barium. Annual analysis of chromium and barium (EPA Method 6010B) was conducted in the second quarter event. Lead analysis (EPA Method 6010B) was performed on all of the TP Wells, MW #49, and DW#1. DW #1 also received an analysis for mercury (EPA Method 7470). In addition, groundwater samples were analyzed for BTEX and MTBE (EPA Method 8021B), GRO and DRO (EPA Method 8015B). Field measurements included temperature, pH, conductivity, DO, and ORP.

An in situ respiration test was not performed in May 2007 due to high flow rates of the San Juan River and the inability to duplicate similar conditions as the May 2006 respiration test. The in situ respiration test has been tentatively scheduled for September 2007.

GAC filter influent samples (GAC Inf) and effluent samples collected downstream of the lag GAC filter (GAC 2 Eff) were collected quarterly. Effluent samples from the lead GAC filter (GAC 1 Eff) were obtained weekly until breakthrough was detected. Samples were analyzed for BTEX by EPA Method 8021B, GRO and DRO by EPA Method 8015B.



Weekly samples were not available at various times throughout the six-month period from January 2007 through June 2007 due to a variety of operational issues. Causes and dates are as follows; January 11, 2007 to February 6, 2007 due to both dewatering pumps broke down and subsequent replacement of both pumps, the week of March 3, 2007 due to a break and repair of discharge piping, the week of March 26, 2007 the river pumps were down due to an extremely muddy San Juan River, and the week of April 12, 2007 the river pumps were down due to the refinery's fresh water ponds were full.

Break through in the lead GAC was detected in April through lab analysis and V-612 was bypassed and taken out of service on April 30, 2007. V-611 became the lead GAC at that time. Approximately 1,886,500 gallons of groundwater flowed through the filters before breakthrough occurred. Refinery personnel will continue to analyze GAC 1 EFF (V-611) for BTEX, GRO, and DRO on a monthly basis. GAC INF and GAC 2 EFF (V-612) will be analyzed quarterly for BTEX, GRO, and DRO.

Analytical results of the groundwater monitoring continue to indicate that the contaminants of concern are primarily benzene, toluene, ethylbenzene, and xylene (BTEX) at TP #1, TP #2, TP #5, and TP #8. BTEX results at TP #6 were below WQCC Standards in 2007. BTEX results are still below WQCC Standards at TP #3, TP #7, TP #9, TP #10, TP #11, TP #12 and TP #13.

The average oxygen concentration of TP-#1, TP-#2, TP-#5, TP-#6, TP-#8 was between 19 to 20 percent by volume in soil gas, which shows that the area is well oxygenated. An adequate supply of oxygen is critical to an environment in which aerobic organisms can grow and metabolize the petroleum hydrocarbons. Measured high oxygen readings (above 10%) support the notion of a well oxygenated vadose zone that supports aerobic biodegradation activity.

Field data indicates the bioventing system is continuing to enhance bioremedial activity within the river terrace area around TP-#1, TP-#2, TP-#5, TP-#6, and TP-#8. Soil gas concentrations collected in the field show that the bioventing system provides sufficient oxygen supply to fully oxygenate the subsurface, supporting aerobic biodegradation of hydrocarbons.

Performance monitoring will continue on a quarterly basis following the guidelines from the Bioventing System Monitoring Plan and the June 13, 2007 NMED letter (Direction to Modify Future Monitoring as reported in the River Terrace Voluntary Corrective Measures Bioventing System Annual Report January 2006 through December 2006).

### Section 7.0 Maps

Title	Figure
Vicinity Map	Figure 1
Facility Site Plan	Figure 2
River Terrace Bioventing Project Plot Plan	Figure 3
Soil Vapor BTEX Concentration Map	Figure 4
Groundwater BTEX Concentration Map	Figure 5

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Section 8.0 Field Methods

### **Field Methods**

### Soil Gas Sampling

### Sampling Procedure

All water/product levels are determined to an accuracy of 0.01 foot using a Geotech Interface Meter. Soil gas samples are taken before groundwater purging and sampling.

Each well is equipped with an air-tight well cap for sample extraction through a sample port at the top of the well casing. Each well has dedicated flexible Teflon Food Grade tubing which extends through both sides of the sample port with one side continuing down into the well casing to approximately 1 foot above the water table. The other end (topside) protrudes from the cap and is available as a connector.

Before purging, pressure is measured by attaching a hand-held Magnahelic Pressure Gauge to the topside tubing.

A portable vacuum pump is used for purging and sample collection. The topside tubing is connected to the suction of the vacuum pump and three purge volumes are withdrawn from the well prior to sample collection. After sufficient purging, a Tedlar bag is attached to the tubing at the discharge end of the pump for sample collection. All samples are properly labeled and placed in a cooler for delivery to the off-site laboratory or for field measurements of vapor-phase organics

### Well Purging Technique

A vacuum pump is used to remove stagnant air from the soil gas sampling assembly. Approximately three well volumes are purged from the well before sampling. Purged volumes are determined by using the following equation: Conversion Factor X Depth to Water X 28L/ft3 X Three

The conversion factor is determined by the diameter of the well casing.

Casing	Conversion Factor
6"	0.196L/ft
4"	0.0873L/ft
2"	0.0.0218L/ft
1"	0.0.0055 <b>4</b> 5L/ft

### Soil Gas Sampling and Sample Handling Procedure

Equipment and supplies needed for collecting representative soil gas samples include:

- Interface Probe
- Vacuum Pump
- 1 Liter Tedlar Bags
- PID Meter
- RKI Eagle Meter
- Cooler to store Tedlar Bags
- Sharpie Permanent Marker

- Field Paperwork/Logsheet
- Trash container (plastic garbage bag)

Tedlar bags and tubing dedicated for each well are used for field measurements. New Tedlar bags are used for BTEX and GRO collection and analysis. After sufficient purging, samples are collected using the vacuum pump. Field measurements of vapor-phase organics, oxygen, and carbon dioxide concentrations are recorded using portable field instruments. BTEX and GRO samples are labeled immediately with location, date, time, analysis, and sampler and then put in a trash bag and placed in a cooler. The field logsheet is reviewed to verify all entries. Samples are then shipped to the laboratory.

To prevent cross-contamination, procedures include dedicated tubing for each of the wells sampled as well as a five minute purge time of the vacuum pump in ambient air.

### Instrument Calibration

The RKI Eagle is a portable gas detection system with sensors for oxygen, carbon dioxide, and methane. Calibration of the instrument is conducted at the beginning of each day of sampling.

The meter is turned on and allowed to warm up. Fill the dedicated Tedlar bags with known calibration gas. One bag is used for the carbon dioxide calibration and the other bag contains the oxygen and methane calibration gasses. Press and hold the AIR/ $\Delta$  button until a tone sounds. The Eagle automatically sets the toxics circuits to zero and the oxygen circuit to 20.9%.

Press and hold the SHIFT /♥ button, then press the DISP/ADJ button. The calibration menu is displayed. Use the AIR/▲ and SHIFT/♥ buttons to place the prompt next to the SINGLE CALIBRATION menu option. Press the POWER/ENTER button to display the Single Calibration menu. Use the AIR/▲ or SHIFT/♥ button to place the prompt next to the channel to calibrate. Press the POWER/ENTER button. Connect the tubing from the Tedlar bag to the Eagle's probe. If necessary, use the AIR/▲ (increase) and SHIFT/♥ (decrease) buttons to adjust the reading to match the concentration listed on the calibration cylinder. Press the POWER/ENTER button to set the span value. Repeat the steps for any other channels you want to calibrate.

The MiniRae 2000 Portable VOC Monitor (PID) is calibrated at the beginning of each day of sampling. Turn on the monitor and wait for the **Ready** message display. Press and hold both (N/-) and (MODE) keys for three seconds to enter programming mode. The first menu item "Calibrate/select Gas?" will be displayed. Press (N/-) to scroll to Fresh Air Cal? And press (Y/-) to select that menu item. Clean ambient air can be used for the "fresh air" calibration. Press (Y/-) to begin the zeroing process.

After zeroing is complete, press (N/-) to scroll to the next menu item. When **Span Cal?** is displayed press (Y/-) to select that menu item. Connect the monitor to a known calibration gas cylinder (isobutylene) after the display shows **Apply gas now!** The monitor will then perform the calibration. When calibration is

completed, turn off the flow of gas, disconnect the cylinder, and exit the programming mode by pressing the **(MODE)** key once.

### **Groundwater Sampling**

### **Groundwater Elevation**

All water/product levels are determined to an accuracy of 0.01 foot using a Geotech Interface Meter. The technician records separate phase hydrocarbon, depth to water, and total well depth using this probe.

### Water Quality/Groundwater Sampling

Prior to purging, a YSI 550A Dissolved Oxygen Probe is used to determine dissolved oxygen (DO) levels. Water quality parameters are measured using an Ultrameter 6P by the Myron L Company. Electrical conductance, oxidation-reduction potential (ORP), pH, and temperature are monitored during purging.

### Well Purging Technique

At least three well volumes are purged from the well. Purge volumes are determined using the following equation:

Well Depth – Casing Height – Depth to Liquid X Conversion Factor X Three. The conversion factor is determined by the diameter of the well casing.

Casing	Conversion Factor
6"	1.50 gal/ft
5"	1.02 gal/ft
4"	0.74 gal/ft

3"	0.367 gal/ft
	0 4 0 0 H M

### 2" 0.163 gal/ft

### Well Sampling and Sample Handling Procedure

Equipment and supplies needed for collecting representative groundwater samples include:

- Interface Probe
- Ultrameter 6P
- YSI 550A Dissolved Oxygen Instrument
- Distilled Water
- Disposable Latex Gloves
- Disposable Bailers
- String/Twine
- Cooler with Ice
- Bottle kits with Preservatives (provided by the contract laboratory)
- Glass Filters and Syringes Jar (usually 4 oz.)
- Sharpie Permanent Marker
- Field Paperwork/Log sheet
- Two 5-gallon buckets
- Trash container (plastic garbage bag)

- Ziploc Bags
- Paper towels

Typically disposable bailers are used for purging and sampling. Each bailer holds one liter of liquid. Three well volumes can be calculated by counting the number of times a well is bailed.

All purged water is poured into a 55-gallon drum designated for sampling events.

After sufficient purging, samples are collected with the bailer and poured into the appropriate sample containers. Two people are usually utilized for sampling. Sampling takes place over a bucket to insure that spills are contained

Samples are labeled immediately with location, date, time, analysis, preservative, and sampler. Then they are put in a Ziploc bag and placed in a cooler holding sufficient ice to keep them cool. The field log sheet is reviewed to verify all entries.

### Purge and Decontamination Water Disposal

The Ultrameter 6P, YSI 550A DO Probe, and the interface probe are rinsed with distilled water after every well. The rinse procedure takes place over a bucket to insure that spills are contained.

All rinse and purge water is contained and then disposed of through the refinery wastewater system.

### Instrument Calibration

Calibration of the YSI 550A Dissolved Oxygen Instrument occurs at the beginning of each day of sampling. The probe is powered on and allowed to stabilize, which usually takes 15 minutes. Enter the calibration menu. The LCD will prompt you to enter the local altitude in hundreds of feet. When the proper altitude appears on the LCD, press the **ENTER** key.

The LCD will then prompt you to enter the salinity of the water you are about to analyze. After entering the correct salinity, the instrument will return to normal operation.

The Ultrameter 6P instrument calibration occurs at the beginning of each day of sampling. For Conductivity and TDS calibration, the cell is rinsed three times with a 3000 umhos/cm NaCl Standard. The cell cup is refilled with the standard. Either the **COND** or the **TDS** button is pressed and then the **CAL** button is pushed. Press the up or down arrow until the display agrees with the standard. The **CAL** button is pressed to accept the value.

The Ultrameter 6P has an electronic ORP calibration which is automatically calibrated with the 7 pH. The pH sensor well is rinsed three times with 7.0 buffer solution and then refilled again with that buffer. The **pH** button is pressed then the **CAL** button. The up or down arrow is adjusted until the display agrees with the buffer value. The **CAL** button is pushed to accept that value. Repeat the

calibration steps using an acid buffer solution and then again with a base buffer solution.

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# Section 9.0 Chemical Analytical Program

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# Hall Environmental Analysis Laboratory

# **QUALITY ASSURANCE PLAN**

# Effective Date: May 2007

# **Revision 8.3**

www.hallenvironmental.com

Control Number: 0000069

Approved By:

Nancy McDuffie Date Laboratory Manager/QA Officer Approved By:

Andy Freeman **Business Manager** 

Date



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# **Table of Contents**

Section	Title	<u>Page</u>
1.0	Title Page	1
2.0	Table of Contents	3
3.0	Introduction	5
	Objectives Policies	
<b>4.0</b>	Organization and Responsibility Company Personnel and Responsibilities Laboratory Director Laboratory Manager Business/Project Manager Quality Assurance Officer Section Managers/technical directors Chemist Lab Technician Sample Control Manager Delegation of absence employees Personnel Qualifications and Training Organizational Structure	7
5.0	Receipt and Handling of Samples Sampling Procedures Containers Preservation	13
	Sample Custody Chain-of-Custody Form Receiving Samples Logging in Samples and Storage Disposal of Samples	17
6.0	Analytical Procedures List of Procedures Used	20

7.0	Calibration Instrument Calibration Standards Procedures Reagents Analytical Balance pH Meter Thermometers Refrigerators Ovens Analytical Instrumentation Other Analytical Instrumentation and Equipment	22
8.0	Maintenance	24
9.0	Quality Control Internal Quality Control Checks Precision, Accuracy, Detection Limit Quality Control Parameter Calculations Mean Standard Deviation Percent Recovery (%R) Confidence Intervals Relative Percent Difference (RPD) Uncertainty Measurements Calibration Calculations	25
10.0	Data Reduction, Validation, and Reporting Data Reduction Validation Reports and Records	32
11.0	Corrective Action	34
12.0	Quality Assurance Audits and Reports Internal/External Systems' Audits and Internal and External Reports	35
13.0	Analytical Protocols	37
Appendi	x A Current laboratory licenses and list of licensed parameters	39

# 3.0 Introduction

### Purpose of Document

The purpose of this Quality Assurance Manual is to formally document the quality assurance policies and procedures of Hall Environmental Analysis Laboratory, Inc. (HEAL), for the benefit of its employees, clients, and accrediting organizations. This laboratory continually implements the aspects of this plan as an essential and integral part of laboratory operations in order to assure that high quality data is produced in an efficient cost effective manner.

# Objectives

The objective of HEAL is to achieve and maintain excellence in environmental testing. This is accomplished by developing, incorporating and documenting the procedures and policies specified in this manual. A laboratory staff that is analytically competent, well qualified, and highly trained carries out these activities. An experienced management team, knowledgeable in their area of expertise, monitors them. Finally, a comprehensive Quality Assurance program governs laboratory practices and assures that the analytical results are valid and defensible.

HEAL establishes and thoroughly documents its activities to ensure that all data generated and processed will be scientifically valid and of known and documented quality. Routine laboratory activities are detailed in method specific. All data reported meets the applicable requirements for NELAC, EPA and/or State Bureaus. For specific method requirements refer to Standard Operating Procedures (SOP's), EPA methods, Standard Methods 20<sup>th</sup> edition or state specific methods.

The management assures that this documentation is correct in terms of required accuracy, data reproducibility, and that the procedures contain proper Quality Control measures. The management additionally assures that all equipment is reliable, well maintained and calibrated. The procedures and practices of the laboratory are able to conform to client specifications and regulatory requirements. Meticulous records are maintained for all samples and their respective analyses so that results are well documented and defensible in a court of law.

The HEAL QA Officer is responsible for supervising and administering this quality assurance program, insuring each individual is responsible for its proper implementation. All HEAL management remains committed to the encouragement of excellence in analytical testing and will continue to provide the necessary resources and environment conducive to its achievement.

### Policies

Understanding that quality cannot be mandated, it is the policy of this laboratory to provide an environment that encourages all staff members to take pride in the quality of their work. In addition to furnishing proper equipment and supplies, HEAL stresses the importance of continued training and professional development. Further, HEAL recognizes the time required

for data interpretation. Therefore, no analyst feels pressure to sacrifice data quality for data quantity. Each staff member must perform with the highest level of integrity and professional competence, always being alert to problems that could compromise the quality of technical work.

Management and senior personnel supervise analysts closely in all operations. Under no circumstance is the willful act or fraudulent manipulation of analytical data condoned. Such acts must be reported immediately to the management. Reported acts will be assessed on an individual basis and resulting actions could result in dismissal. The laboratory slaff is encouraged to speak with lab managers or senior management if they feel that there are any commercial, financial, or other undo pressures, which might adversely affect the quality of their work.

All client information at HEAL is considered confidential. No information will be given out without the express verbal or written permission of the client. All reports generated will be held in the strictest of confidence.

This is a controlled document. Each copy is assigned a unique tracking number and when released to a client or accrediting agency the QA Officer keeps the tracking number on file.

# 4.0 Organization and Responsibility

### Company

HEAL is accredited in accordance with NELAC standards (see NELAC accredited analysis list) and by the Arizona Department of Health Services. Additionally, HEAL is qualified as defined under the Petroleum Storage Tank Regulations of the State of New Mexico Environmental Improvement Board (USTR §1201), the State of New Mexico Water Quality Control Commission regulations and the New Mexico State Drinking Water Bureau. It is a locally owned small business that was established in 1991. HEAL is a full service Environmental Analysis Laboratory with analytical capabilities that include both organic and inorganic methodologies and has performed analyses of soil, water and air samples for many sites in the region. HEAL's client base includes local, state and federal governmental agencies, private consultants as well as individual homeowners. It has performed as a subcontractor to the state of New Mexico and to the New Mexico Department of Transportation. HEAL has been acclaimed by its customers as producing quality results and as being adaptive to client-specific needs.

The laboratory is divided into a volatile organic section, a semi-volatile organic section, and an inorganic section. Each section has a designated manager/technical director. The section managers report directly to the laboratory manager, who oversees all operations.

### Certifications

National Environmental Laboratory Accreditation Program (NELAP) – Oregon Primary accrediting authority.

Arizona Department of Health Services

See appendix A for copies of current licenses and licensed parameters.

#### Personnel

All employees training certificates and diplomas are kept on file with demonstrations of capability for each method they perform. An Organizational Chart can be found on page 11.

### Laboratory Director

The Laboratory Director is responsible for overall technical direction and business leadership of Hall Environmental Analysis Laboratory, Inc. The Laboratory Manager and the Business Manager report directly to the Laboratory Director. Someone with a minimum of 7 years of directly related experience and a BS in a scientific or engineering discipline should fill this position.

# Laboratory Manager/Technical Director

The Laboratory Manager is responsible for the daily operations of the laboratory. The Laboratory Manager is the technical director of the laboratory and in conjunction with the technical directors of the sections, is responsible for coordinating activities within the laboratory with the overall goal of efficiently producing high quality data in a reasonable time.

In events where employee scheduling or current workload is such that new work cannot be incorporated with missing holdtimes, the Laboratory Manager has authority to modify employee scheduling or re-schedule projects.

Additionally, the laboratory manager reviews and approves new analytical procedures and methods, and performs a technical review of most analytical results. The Laboratory Manager provides technical support to customers and staff.

The Lab Manager also observes the performance of supervisors to ensure good laboratory practices and proper techniques are being taught and utilized, assisting in overall quality control implementation, and strategic planning for the future of the company. Other duties include assisting in establishing laboratory policies which lead to the fulfillment of requirements for various certification programs, assuring that all Quality Assurance and Quality Control documents are reviewed and approved, and assisting in conducting Quality Assurance Audits.

The lab manager addresses questions or complaints that cannot be answered by the section managers. Someone with a minimum of 7 years of directly related experience and a BS in a scientific or engineering discipline should fill this position.

# **Business/ Project Manager**

The role of the business/project manager is to act as a liaison between the client and the laboratory. The business project manager reviews reports, updates clients on the status of projects in-house, prepares quotations for new work, and is responsible for the marketing effort.

All new work is assessed by the project manager and reviewed with the other managers so as the not exceed the laboratories capacity. In events where employee scheduling or current workload is such that new work cannot be incorporated with missing holdtimes, the Business Manager has authority to re-schedule projects.

It is also the duty of the project manager to work with government agencies and other clients to make certain that the laboratory is compliant on specific work plan requirements.

Additionally, the Business Manager can initiate the review of the need for new analytical procedures and methods, and performs a technical review of some analytical results. The Business Manager provides technical support to customers. Someone with a minimum of

7 years of directly related experience and a BS in a scientific or engineering discipline should fill this position.

9

### Quality Assurance Officer

The Quality Assurance Officer (QAO) is responsible for developing and carrying out the approved Quality Assurance Program, and advising and assisting management in meeting these requirements. The QAO monitors quality control activities of the laboratory in order to determine conformance with the Quality Assurance Program, performing Quality Assurance Audits, writing reports, providing follow-up action, and issuing Observation and Corrective Action Reports as needed.

Additional responsibilities include cataloged documentation of the following: Staff Training and Demonstration Of Capability (DOC) records, Instrument Detection Limits (IDL), Method Detection Limits (MDL), and Instrument/Equipment Certification and/or Maintenance records.

Complaints from clients are logged on a complaint form, which is reviewed by the QAO to ensure that it is handled according to the Quality Systems Section 5.5.3.1 and kept on file. When procedures are not in compliance with the requirements of this plan, "stop work orders" can be issued.

Finally, the QAO provides clients with Quality Control data and Quality Assurance reports as requested. Someone with a minimum of 3 years of directly related experience and a BS in a scientific or engineering discipline should fill this position or it can be filled by a senior manager.

## Section Manager/Technical Directors

The Section Manager/Technical Directors are responsible for training and supervising departmental staff. They schedule incoming work and monitor laboratory personnel to ensure that proper procedures and techniques are being used. They supervise and implement new Quality Control procedures as directed by the QAO, update and maintain guality control records and evaluate laboratory personnel in their Quality Control activities.

They are the technical director of the associated section and review analytical data to acknowledge that data meets all criteria set forth for good Quality Assurance practices. Someone with a minimum of 3 years of directly related experience and a BS in a scientific or engineering discipline should fill this position.

### Chemist I, II and III

A Chemist is responsible for the analysis of soil and water samples and the generation of high quality data in accordance with the laboratory SOPs and QA/QC guidelines in a reasonable time as prescribed by standard turnaround schedules or as directed by the Section Manager, Laboratory Manager or Business Manager.

The chemist is responsible for making sure all data generated is entered in the database in the correct manner and the raw data is reviewed, signed and delivered to the appropriate peer for review. A Chemist reports daily to the section manager and will inform them as to material needs of the section specifically pertaining to the analyses preformed by the chemist. Additional duties may include preparation of samples for analysis, maintenance of lab instruments or equipment, cleaning and providing technical assistance to lower level laboratory staff.

The senior chemist in the section may be asked to perform supervisory duties as related to operational aspects of the section. The chemist may perform all duties of a lab technician.

The position of Chemist is a full or part time hourly position and may divided into three levels, Chemist I, II, and III. Chemist I must have a minimum of an AA in a related field or equivalent experience. Chemist II must have a minimum of an AA in a related field or equivalent plus, at least 2 years of environmental or closely related lab experience. Chemist III must have Bachelors degree and 3 years of environmental or closely related lab experience. It is experience.

### Lab Technician

A lab technician is responsible for providing support in the form of sample preparation, sample analysis, general lab maintenance, glassware washing, chemical inventories and sample kit preparation.

### Sample Control Manager

The sample control manager is responsible for receiving samples and reviewing the sample login information after it has been entered into the computer. The sample control manager also checks the samples against the chain-of-custody for any sample and/or labeling discrepancies prior to distribution.

The sample control manager is also responsible for sending out samples to the subcontractors along with the review and shipping of field sampling bottle kits. The sample control manager acts as a liaison between the laboratory and field sampling crew to assure the appropriate analytical tests is assigned. If a discrepancy is noted the sample Control Manager or sample custodian will contact the customer to resolve any questions or problems. The Sample Control Manager is an integral part the customer service team.

This position should be filled by someone with a high school diploma and a minimum of 3 years of directly related experience and can also be filled by a senior manager.

### **Delegations in the Absence of Key Personnel**

Planned absences shall be preceded by notification to the Laboratory Manager. The appropriate staff members shall be informed of the absence. In the case of unplanned absences, the organizational superior shall either assume the responsibilities and dulies or delegate the responsibilities and duties to an appropriately qualified member.

## Laboratory Personnel Qualification and Training

All personnel joining HEAL shall undergo orientation and training. During this period the new personnel shall be introduced to the organization and their responsibilities, as well as the policies and procedures of the company. They shall also undergo on the job training and shall work with trained staff. They will be shown required tasks and be observed while performing them. Initial demonstration of capability must be completed and documented prior to performing assignments unsupervised.

New employees that do not have prior analysis experience will not be allowed to perform analysis until they have demonstrated attention to detail with minimal errors in the assigned tasks. To ensure a sustained level of quality performance among staff members, continuing demonstration of capability shall be performed at least once a year.

Laboratory staff must successfully pass an external Proficiency Testing (PT) sample or initial PT sample. Each new employee shall sign an ethics and data integrity agreement to ensure that they know that data quality is our main objective. Every HEAL employee recognizes that although turn around time is important, quality is put above any pressure to complete the task expediently. Analysts are not compensated for passing QC parameters nor are incentives given for the quantity of work produced.



## 5.0 Receipt and Handling of Samples

# Sampling

### Procedures

HEAL does not provide field sampling for any projects. Sample kits are prepared and provided for clients upon request. The sample kits contain the appropriate sampling containers (with a preservative when necessary), labels, blue ice, a cooler, chain-of-custody forms, plastic bags, bubble wrap, and any special sampling instructions. The sample control manager reviews the kits prior to shipment.

# Containers

Containers which are sent out for sampling are purchased by HEAL from a commercial source. Glass containers are certified "EPA Cleaned" QA level 1. Those containers are received with a Certificate of Analysis verifying that the containers have been cleaned according to the EPA wash procedure. Containers are generally used once and discarded. If the samples are collected and stored in inappropriate containers the laboratory may not be able to accurately quantify the amount the desired components. In this case re-sampling may be required.

### Preservation

If sampling for an analyte(s) requires preservation, the sample custodians fortify the containers prior to shipment to the field. The required preservative is introduced into the vials in uniform amounts and done so rapidly to minimize the risk of contamination. Vials that contain a preservative are labeled appropriately.

The following pages contain tables specifying additional preservation requirements for samples.

# Tables of Standard Holding Times, Preservation, and Containers

# Organic Compounds

1010)111910161616	Mator	Gentellie	Hardes Ganzalines	Etoleline Efrite
Purgeable halocarbons and aromatics	aqueous	40 mL glass voas, teflon- lined septum	HgCl₂, or HCl, pH <2; cool, <6° C	14 days to analysis
Purgeable halocarbons and aromatics	Soil/MeOH*	4 oz. Jar/2- 20 ml VOAs w/ methanol	cool, <6° C	14 days to analysis
Semi-volatiles	aqueous	1 L amber	cool, <6° C	7 days to extract, 40 days after extraction to analyze
Semi-volatiles	soil	8 oz. Jar	cool, <6° C	14 days to extract, 40 days after extraction to analyze
PCBs, pesticides, herbicides	aqueous	1 L amber	cool, <6° C	7 days to extract, 40 days after extraction to analyze
PCBs, pesticides, herbicides	soil	8 oz. Jar	cool, <6° C	14 days to extract, 40 days after extraction to analyze

\*Use of field methanol kits are available and recommended for the PSTB.

# Inorganic Compounds

Golygelelugit	NETTO	Gemeine	are entitle	
Ácidity	aqueous	250-mL HDP	cool, <6° C	14 days
Alkalinity	aqueous	250-mL HDP	cool, <6° C	14 days
Ammonia	aqueous	1-L HDP	cool, <6º C, H₂SO₄ pH<2	28 days
Biochemical Oxygen Demand	aqueous	2-L HDP	cool, <6° C	48 hours
Bromide	aqueous	250-mL HDP	none required	28 days
Chemical Oxygen Demand	aqueous	125-mL HDP	cool, <6° C, H₂SO₄  pH<2	28 days
Chloride	aqueous	125-mL HDP	none required	28 days
Chloride	solid	4-oz jar	none required	28 days
Chlorine, total residual	aqueous	500-mL HDP	none required	analyze immediately
Chromium VI	aqueous	250-mL HDP	cool, <6° C	24 hours
Chromium VI	solid	8-oz jar	cool, <6º C	as soon as possible



Esennerstelije		esonence.	ELESSENCE	
Color	aqueous	125-mL HDP	cool, <6° C	48 hours
Cyanide	aqueous	1-L HDP	cool, <6° C	14 days
			NaOH pH>12	
Cyanide	solid	4-oz jar	cool, <6° C	14 days
Fluoride	aqueous	500-mL HDP	none required	28 days
Hardness	aqueous	250-mL HDP	HNO <sub>3</sub> or	6 months
·			H₂SO₄ pH<2	: 
Hydrogen ion (pH)	aqueous	60-mL HDP	none required	analyze immediately
Hydrogen ion (pH)	solid	4-oz jar	none required	analyze immediately
Kjeldahl and organic	aqueous	1-L HDP	cool, <6° C,	28 days
nitrogen	:	·	H₂SO₄ pH<2	
Mercury	aqueous	250-mL HDP	$HNO_3 pH < 2$	28 days
Mercury	solid	8-oz jar	none required	28 days
ivietais (except Cr VI	aqueous	500-mL HDP	HNO <sub>3</sub>	6 months
and Hg)			pH < 2	
Nitrate	aqueous	250-ML HUP	cool, <6° C	48 hours
Nitrate	solid	8-oz jar	cool, <6° C	analyze immediately
Nitrate-Nitrite	aqueous	250-mL HDP	cool, <6° C,	28 days
	· · · · ·		$H_2SO_4$ pH<2	
Nitrate-Nitrite	solid	8-oz jar	cool, <6° C	28 days
Nitrite	aqueous	125-mL HDP	cool, <6° C	48 hours
Oil and Grease	aqueous	2-L wide-	cool, <6° C,	28 days
		mouth glass	H₂SO₄ pH<2	
Oil and Grease	solid	2-L WIDE-	∙ cool, <6° C	28 days
Organia				
Organic Carbon	aqueous		1001, < 5° C,	28 days
		;	поги п <sub>2</sub> 304	•
Organic Carbon	solid	4-oz iar	$cool < 6^{\circ}$	28 days
Orthonhosnhate	aqueous	125-mL HDP		48 hours
Phenolics	aqueous	1_L Boston		28 days
r nenolius	aqueous	Round	H_SO _ nH<2	20 days
Phenolics	solid	8-oz iar	cool <6° C	28 days
1 HOHOIDS	Jona	(glass only)	0001, 40 0	20 00/3
Phosphorous	aqueous	1-L Boston	cool <6° C	48 hours
(elemental)	· · · · · · · · · · · · · · · · · · ·	Round		
Phosphorous (total)	aqueous	125-mL HDP	cool. <6° C.	28 days
	•		H₂SO₄ pH<2	•
Residue, total	aqueous	250-mL HDP	cool, <6° C	7 days
Residue,	aqueous	250-mL HDP	cool. <6° C	7 days
filterable(TDS)	• ,			•
Residue, non-	aqueous	250-mL HDP	cool, <6° C	7 days
filterable (TSS)				
Residue, settleable	aqueous	Imhoff Cone	cool, <6° C	48 hours

Sel (100) 11:10 NETTE eenthoe HEISTHRY-HUZ-Silica 125-mL HDP 28 days aqueous cool, <6° C Specific 250-mL HDP 28 days aqueous cool, <6° C conductance Specific solid 8-oz jar cool, <6° C 28 days conductance 125-mL HDP Sulfate aqueous cool, <6° C 28 days 28 days Sulfate solid 4-oz jar cool, <6° C 1-L HDP Sulfide 7 days aqueous cool, <6° C, ZnAc+ NaOH pH>9 Sulfide 8-oz jar 7 days solid cool, <6° C

500-mL HDP

250-mL HDP

	A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANCE AND A LANC
Residue	volatile
	VOIGING

Surfactants

Turbidity

# aqueous

aqueous

aqueous

250-mL HDP cool, <6° C 7 days

48 hours

48 hours

cool, <6° C

cool, <6° C

10		
12		
- B.	30.	



### Sample Custody

#### Chain-of-Custody Form

A Chain-of-Custody (CoC) form is used to provide a record of sample chronology starting with the field sampling through laboratory analysis. HEALs CoC contains the client's name, address, phone and fax numbers, the project name and number, the project manager's name, and the field sampler's name. It also identifies the date and time of sample collection, sample matrix, field sample ID number, number/volume of sample containers, sample temperature upon receipt, and any sample preservative information.

There is also a space to record the HEAL ID number assigned to samples after they are received. Next to the sample information is a space for the client to indicate the desired analyses to be performed. Finally, there is a section to track the actual custody of the samples. The custody section contains lines for signatures, dates and times when samples are relinquished and received. The CoC form also includes a space to record special sample related instructions, sampling anomalies, time constraints, and any sample disposal considerations.

A sample chain-of-custody form can be found at the end of this section.

### **Receiving Samples**

Samples are received by authorized HEAL personnel. Upon arrival, the CoC is compared to the respective samples. After the samples and CoC have been determined to be complete and accurate, the sampler signs over the CoC. The HEAL staff member in turn signs the chain-of-custody, also noting the current date and time. This relinquishes custody of the samples from the sampler and delegates sample custody to HEAL. The third (pink) copy of the CoC form is given to the person who has relinquished custody of the samples.

# Logging in Samples and Storage

Standard Operating Procedures have been established for the receiving and tracking of all samples (refer to HALL Login SOP). These procedures ensure that samples are received and properly logged into the laboratory, and that all associated documentation, including chain of custody forms, are complete and consistent with the samples received. Each sample set is given a unique HEAL tracking ID number. Individual sample locations within a defined sample set are given a unique sample ID suffix-number. Labels with the HEAL numbers, and analytes requested, are generated and placed on their respective containers. The pH of preserved samples is checked and noted if out of compliance. Samples are reviewed by the sample control manager prior to being distributed to the storage refrigerators or appropriate laboratory personnel.

Samples are stored in the volatile section refrigerator, the semi-volatile section refrigerator, or the inorganic section refrigerator. If a soil sample must be extracted for both volatile and semi-volatile analysis, it is first placed into the volatile soil sample refrigerator. After the volatile extraction, the sample is moved to the semi-volatile refrigerator to minimize any risk of contamination.



Each project (sample set) is entered into the Laboratory Information Management System (LIMS) with a unique ID given to every container. The ID tag includes the Lab ID, Client ID, date and time of collection, and the analysis/analyses to be performed. The LIMS continually updates throughout the lab. Therefore, at any time, an analysi or manager may inquire about a project and/or samples status. For more information about the login procedures, reference the Sample Login SOP.

#### Disposal of Samples

Analytical results are used to characterize their respective sample contamination level(s) so that the proper disposal can be performed. These wastes will be disposed of according to their hazard as well as their type and level of contamination. Refer to the Hall Environmental Analysis Laboratory Chemical Hygiene Plan for details regarding waste disposal.

Waste drums are provided by an outside agency. These drums are removed by the outside agency and disposed of in a proper manner.

The wastes that are determined to be non-hazardous are disposed of as non-hazardous waste.

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# 6.0 Analytical Procedures

All analytical methods used at HEAL incorporate necessary and sufficient Quality Assurance and Quality Control practices. A Standard Operating Procedure is used for each method to provide the necessary criteria to yield acceptable results. These procedures are updated each year or more often if necessary and are attached as a pdf file in the Laboratory Information Management System (LIMS) for easy access by each analyst. The sample is almost always consumed or altered during the analytical process. Therefore, it is important that each step in the analytical process be correctly followed in order to yield valid data.

When unforeseen problems arise, the analyst, section manager, and lab manager meet to discuss the factors involved. The analytical requirements are evaluated and a suitable corrective action, or resolution is established. The client is notified in the case narrative with the final report or before if validity is in question.

# List of Procedures Used

Typically, the procedures used by HEAL are EPA approved methodologies. However, proprietary methods for client specific samples, are sometimes used. The following tables list EPA Method numbers with their corresponding analytes and/or instrument classification.

# **Organic Analysis**

Mellionelan	illie of Method
8021B	"Halogenated and Aromatic Volatile Organics by Gas Chromatography"
8015B	"Nonhalogenated Volatile Organics by Gas Chromatography"
	(Gasoline Range and Diesel Range Organics)
8081A	"Organochlorine Pesticides by Gas Chromatography"
8082	"PCBs as Aroclors by Gas Chromatography"
8151A	"Chlorinated Herbicides by GC using Methylation or Pentafluorobenzylation
	Derivitization"
8310	"Polynuclear Aromatic Hydrocarbons"
8330	"Nitroaromatics and Nitramines"
8315	"Formaldehyde"
1005	"TNRCC – Total Petroleum Hydrocarbons"
504.1	"EDB" & "DBCP"
418.1	"Total Petroleum Hydrocarbons"
413.2	"Oil and Grease"

# Gas Chromatographic/Mass Spectrometric Methods

Histaleileleity	
8260B	"Volatile Organic Compounds by GC/MS: Capillary Column Technique"
8270C	"Semivolatile Organic Compounds by GC/MS: Capillary Column Technique"
624	"Purgeables"
625	"Base/Neutrals and Acids"





# Inorganic Analysis

310.1	Alkalinity	
350.3	Ammonia	
300.0/300.1	Anions (aqueous)	•
9065	Anion (soil)	
120.1	Electrical Conductivity	
3500	Ferrous Iron	
351.2	Total Kjeldhal Nitrogen (TKN)	:
9095	Paint Filter	
150.1	рН	:
420.3	Phenols	
160.1	Total Dissolved Solids (TDS)	
160.2	Total Suspended Solids (TSS)	1
180.1	Turbidity	
·	Metals	
200.7/6010B	ICP Metals	
7470	Mercury (aqueous)	
7471	Mercury (soil)	

# Preparative Methodologies

an alice alerente	
1311	Toxicity Characteristic Leaching Procedure
1312	Synthetic Precipitation Leaching Procedure
3005	Acid Digestion of Waters for Total Recoverable or Dissolved Metals
3010	Acid Digestion of Aqueous Samples and Extracts for Total Metals
3050	Acid Digestion of Sediment, Sludge, and Soil samples
3510B	Separatory Funnel Liquid-Liquid Extraction
3540	Soxhlet Extraction
3545	Accelerated Solvent Extraction
3665	Sulfuric Acid/Permanganate Cleanup (PCB)
5030	Purge-and-Trap for Aqueous Samples
5035	Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples

Analytical Standard Operating Procedures (SOPs) are based upon the above listed methods and a variety of other publications. A log of all current SOPs is on file with the QAO and detailed SOPs are available at request.



# 7.0 Calibration

All equipment and instrumentation used at HEAL are operated, maintained and calibrated according to manufacturers guidelines, as well as criteria set forth in applicable analytical methodology. Personnel who have been properly trained in there procedures perform operation and calibration. Brief descriptions of the calibration processes for our major laboratory equipment and instruments are found below.

# Thermometers

The thermometers in the laboratory are used to measure the temperatures of the refrigerators/freezers, ovens, water baths, TCLP Extractions, digestion blocks and samples at the time of log-in. All of these are checked for annually with a NIST certified thermometer and a correction factor is noted on each thermometer log.

## **Refrigerators/Freezers**

Each laboratory refrigerator or freezer contains a thermometer capable of measuring to a minimum precision of 1°C. The thermometers are kept with the bulb immersed in liquid. Each workday, the temperatures of the refrigerators are recorded in a designated logbook to insure that the refrigerators are between  $\pm$  2° C. Samples are stored separately from the standards to reduce the risk of contamination.

### Ovens

The oven contains a thermometer graduated by 1° C. the temperature is measured before and after a cycle when the operating procedure demands this level of precision. Otherwise they are checked daily.

# Instrument Calibration

An instrument calibration is the relationship between the known concentrations of a set of calibration standards introduced into an analytical instrument and the measured response they produce. Calibration curve standards are a prepared series of aliquots at various known concentrations levels from a primary source reference standard. Specific mathematical types of calibration techniques are outlined in SW-846 8000B. The entire initial calibration must be performed prior to sample analyses.

The lowest standard in the calibration curve must be at or below the required reporting limit.

A minimum of 5 calibration points must be used for the calibration curve for GC, GC/MS and HPLC methods.

Most compounds tend to be linear and a linear approach should be favored when linearity is suggested by the calibration data. Non-linear calibration should be considered only when a linear approach cannot be applied. It is not acceptable to use an alternate calibration procedure when a compound fails to perform in the usual manner. When this occurs it is indicative of instrument issues or operator error.

If a non-linear calibration curve fit is employed, a minimum of six calibration levels must be used for second-order (quadratic) curves and a third order polynomial requires a minimum of seven calibration levels.

When more than 5 levels of standards are analyzed in anticipation of using second- or thirdorder calibration curves, all calibration points MUST be used regardless of the calibration option employed. The highest or lowest calibration point may be excluded for the purpose of narrowing the calibration range, and meeting the requirements for a specific calibration option. Otherwise, unjustified exclusion of calibration data is expressly forbidden.

Analytical methods vary in QC acceptance criteria. HEAL follows the method specific guidelines for QC acceptance. The specific acceptance criteria are outlined in the analytical methods and its corresponding SOP.

## Analytical balance

All of the analytical balances are capable of weighing to a minimum precision of 0.1 grams. Records are kept of daily calibration checks for the balances in use. Certified weights are used in these checks. The balances are annually certified by an outside source and the certifications are on file with the QAO.

### pH Meter

The pH meter measures to a precision of 0.01 pH units. The log book contains the calibration before each use, or each day, if used more than once per day. It is calibrated using 3 certified buffers. Also available with the pH meter is a magnetic stirrer with a temperature sensor.

### Other Analytical Instrumentation and Equipment

The conductivity probe constant shall be determined prior to use. A 3 point linear curve is used.

Eppendorf (or equivalent brands) pipettes are calibrated gravimetrically once a week and verified prior to use.

### Reagents

HEAL assures that the reagents used are of acceptable quality for their intended purpose. This is accomplished by ordering high quality reagents and adhering to good laboratory practices so as to minimize contamination or chemical degradation. All reagents must meet any specifications noted in the analytical method.

Upon receipt, all reagents are assigned a separate ID number, and logged into the LIMS. All reagents shall be labeled with the date received into the laboratory and again with the date opened for use. Recommended shelf life shall be documented and controlled. Dilutions or solutions prepared shall be clearly labeled, dated, and signed. These solutions are traceable back to their primary reagents. All gases used with an instrument shall meet specifications of the manufacturer. Recommended shelf life shall be documented and controlled. All safety requirements that relate to maximum and/or minimum allowed pressure, fitting types, and leak test frequency, shall be followed. When a new tank of gas is delivered, it shall be checked for leaks and marked with the date put in use. The date and initial pressure of a new tank will be noted on the new tank.

HEAL has a Quality Assurance Procedure designed to assure that the quality of laboratory reagent water meets established criteria for all analytical methods. HEAL continuously monitors the quality of the reagent water and provides the necessary indicators for maintenance of the purification systems.

Reagent blank samples are also analyzed to ensure that no contamination is present at detectable levels. The frequency of reagent blank analysis is the same as calibration verification samples. The reagent blank and calibration verification should be analyzed successively. Refrigerator storage blanks are stored in the volatiles refrigerator for a period of one week and analyzed and replaced once a week.

### 8.0 Maintenance

Maintenance logs are kept for each major instrument. In the front of the log, the following information is included:

Unique name of the item or equipment Manufacturer Type of Instrument Model Number Serial Number Date received and date placed into service Location of Instrument Condition of instrument upon receipt

For routine maintenance, the following information shall be included in the log:

Maintenance Date Maintenance Description Maintenance Performed by Initials

A manufacturer service agreement (or equivalent) covers most major instrumentation to assure prompt and reliable response to maintenance needs beyond HEAL instrument operator capabilities.



## 9.0 Quality Control

## Internal Quality Control Checks

Hall Environmental Analysis Laboratory, Inc. utilizes various internal quality control checks, including replicates, spiked samples, blanks, laboratory control spikes, calibration standards, quality control charts, uncertainty measurements and surrogates.

25

Replicates, or duplicates, are identical tests repeated for the same sample in order to determine the precision of such a method. A Relative Percent Difference (RPD) is calculated as a measure of this precision.

Spiked Samples (MS/MSD) are samples evaluated with a known added quantity of a target compound. This is to help determine the accuracy of the analyses. A percent recovery is calculated to assess the quality of the accuracy.

Duplicate samples, laboratory control spikes (LCS) and spiked samples (MS/MSD) are performed according to the following schedule for each area:

**Organics**: LCS and MS/MSD samples are analyzed for every batch of 20 samples (sufficient sample volume permitting for the MS/MSD).

**Metals and wet chemistry:** LCS, MS/MSD and sample duplicate analysis are performed, at a minimum, for every batch of 20 samples (sufficient sample volume permitting for the MS/MSD and sample duplicate).

Anions: LCS, MS/MSD and sample duplicate analysis are performed, at a minimum, for every batch of 10 samples (sufficient sample volume permitting for the MS and sample duplicate).

Blanks consist of all the reagents measured and treated as they are with samples, except without the samples. This enables the laboratory to assure clean reagents and procedures.

Blind Quality Control Samples are samples provided by an unbiased third party. They contain a pre-determined concentration of the target compound, which is unknown to the analyst. They are analyzed quarterly, and enable the laboratory to assess the quality of its results.

Calibration standards are standards run to calibrate and confirm the consistency of the instrumentation. Calibration standards are utilized at the beginning and end of each batch, and more frequently for larger batches.

Quality Control Charts are charts with acceptable ranges of the values of quality control checks. If a value falls outside the appropriate range, immediate evaluation and assessment of the procedures is required.

A surrogate compound, a substance that has similar properties to the target compounds (but not expected to be present), is added in all applicable tests. It is a measure of the level of recovery achieved in testing.

Uncertainty measurements are used to estimate the range of uncertainty of a certain result.

The specific types and frequency of QC sample analysis differ from method to method and section to section. Individual method specific QC sample criteria are outlined in the each Methods SOP.

SOPs will be update annually or more often if changes are deemed necessary. SOPs are stored as a linked .pdf file in the test portion of the LIMS. This is done by right clicking on the SOP tab of the test screen and adding the appropriate path where the current SOPs are located on the server. The QAO will update these links as necessary.

An initial demonstration of capability is performed each time there is a change in instrument type, personnel, or test method. A minimum of 4 replicate control spikes are prepared and analyzed according to the test method. Sample results are compared against current acceptable LCS recovery limits.

## Precision, Accuracy, Detection Levels

### Precision

The laboratory uses sample duplicates to assess precision. A duplicate sample is analyzed for each batch of 20 samples (5% frequency) when possible. HEAL requires the RPD to fall within the 99% confidence interval of established control charts or a RPD of less than 20 if control charts are not available. RPD's greater than these limits are considered out-of-control and require an appropriate response. Allowances can be made for high RPD values when the sample results are above the detection limit but less than less than 5X the detection limit. Criteria (based on sample matrix and methodology) for these situations require analyst/supervisor review to determine appropriate corrective action required.

### Accuracy

The accuracy of an analysis refers to the difference between the calculated value and the actual value of a measurement. The accuracy of a laboratory result is evaluated by comparing the measured amount of QC reference material recovered from a sample and the known amount added. Control limits are established for each analytical method and sample matrix. Recoveries are assessed to determine the method efficiency and/or the matrix effect.

Analytical accuracy is expressed as the percent recovery (%R) of an analyte or parameter. A known amount of analyte is added to an environmental sample before the sample is prepared and subsequently analyzed. The equation used to calculate percent recovery is:

%Recovery = {(concentration\* recovered)/(concentration\* added)} X 100

\*or amount

HEAL requires that the Percent Recovery to fall within the 99 % confidence interval of established control limits. A value that falls outside of the confidence interval requires

a warning and process evaluation. The confidence intervals are calculated by determining the mean and sample standard deviation. If control limits are not available, the range of 85 to 115% is used unless the specific method dictates otherwise. Percent Recoveries outside of this range mandate additional action such as analyses by Method of Standard Additions, additional sample preparation(s) where applicable, method changes, out-of-control action or data qualification.

### Detection Limit

Current practices at HEAL define the Detection Limit (DL) as the smallest amount that can be detected above the baseline noise in a procedure within a stated confidence level.

HEAL presently utilize an Instrument Detection Limit (IDL), a Method Detection Limit (MDL), and a Practical Quantitation Limit (PQL). The relationship between these levels is approximately IDL: MDL: PQL = 1:5:5.

The IDL is a measure of the sensitivity of an analytical instrument. The IDL is the amount which, when injected, produces a detectable signal in 99% of the analyses at that concentration. An IDL can be considered the minimum level of analyte concentration that is detectable above random baseline noise.

The MDL is a laboratories measure of the sensitivity of an analytical method. An MDL determination (also outlined in SW-846 Appendix B part 136) consists of replicate spiked samples carried through all necessary preparation steps. The spike concentration is three times the standard deviation of three replicates of spikes. Seven replicates are spiked and then analyzed successively and their Standard Deviation (s) calculated. The method detection limit (MDL) can be calculated using the standard deviation according to the formula:

#### MDL = s \* t (99%)

Where t (99%) is the student's t value for the 99% confidence interval. It depends on the number of trials used in calculating the sample standard deviation, so choose the appropriate value according to the number of trials.

Number of Trials	t(99%)
6	3.36
7	3.14
8	3.00
9	2.90

The calculated MDL must not be less than 10 times the spiked amount or the study must be performed again with a lower concentration.

The PQL is significant because different laboratories can produce different MDLs although they may employ the same analytical procedures, instruments and sample matrices. The PQL is about two to five times the MDL and represents a practical,

and routinely achievable, reporting level with a good certainty that the reported value is reliable. It is often determined by regulatory limits. The reported PQL for a sample is dependent on the dilution factor utilized during sample analysis.

# **Quality Control Parameter Calculations**

### Mean

The sample mean is also known as the arithmetic average. It can be calculated by adding all of the appropriate values together, and dividing this sum by the number of values.

Average =  $(\Sigma x_I) / n$ 

 $x_1 =$  the value x in the l<sup>th</sup> trial n = the number of trials

# **Standard Deviation**

The sample standard deviation, represented by s, is a measure of dispersion. The dispersion is considered to be the difference between the average and each of the values  $x_i$ . The variance,  $s^2$ , can be calculated by summing the squares of the differences and dividing by the number of differences. The sample standard deviation, s, can be found by taking the square root of the variance.

Standard deviation = s =  $\left[\sum (x_1 - average)^2 / (n-1)\right]^{\frac{1}{2}}$ 

# Percent Recovery (MS, MSD, LCS and LCSD)

Percent Recovery = <u>(Spike Sample Result – Sample Result)</u> X100 (Spike Added)

Student's t Distribution

# **Confidence Intervals**

Confidence intervals are calculated using the average (x), the sample standard deviation (s), and the Student's t distribution (s-dist), which depends on the number of values used to calculate the average and sample standard deviation.

The formula is: confidence interval =  $x \pm s^*$  s-dist

				oundation					
F.S.E.IIIIII	in an an an an an an an an an an an an an	i i Berlie	910			2022		SPAN S	STATE
95 %	2.262	2.145	2.093	2.064	2.042	2.021	2.000	1.980	1.960
99%	3.250	2.977	2.861	2.797	2.750	2.704	2.660	2.617	2.576

Unless there is insufficient data, at least 20 values will always be used in calculating the confidence intervals.

### **RPD** (Relative Percent Difference)

Analytical precision is expressed as a percentage of the difference between the results of duplicate samples for a given analyst. Relative percent difference (RPD) is calculated as follows:

RPD = 2 x (Sample Result - Duplicate Result) X 100(Sample Result + Duplicate Result)

### **Uncertainty Measurements**

All procedures allow for some uncertainty. For most analyses the components and estimates of uncertainty are reduced by following well established test methods. To further reduce uncertainty, results are generally not reported below the lowest calibration point (PQL) and above the highest calibration point (UQL). Ranges of uncertainty are also calculated using LCS recoveries. These are kept on file with the QAO and are updated annually.

 $CF=(A_x)/(C_x)$ 

# **Calibration Calculations**

1. Response Factor or Calibration Factor:

 $\mathsf{RF}=((\mathsf{A}_{\mathsf{x}})(\mathsf{C}_{\mathsf{is}}))/((\mathsf{A}_{\mathsf{is}})(\mathsf{C}_{\mathsf{x}}))$ 

a. Average RF or CF

 $RF_{AVE} = RF_i / n$ 

b. Standard Deviation

s = SQRT { [ $\Sigma$  (RF<sub>i</sub> - RF<sub>AVE</sub>)<sup>2</sup>]/(n-1)}

c. Relative Standard Deviation

#### $RSD = s / RF_{AVE}$

Where:

 $A_x$  = Area of the compound

 $C_x = Concentration of the compound$ 

 $A_{is}$  = Area of the internal standard

Cis = Concentration of the internal standard

n = number of pairs of data

RF<sub>i</sub> = Response Factor (or other determined value)

 $RF_{AVE}$  = Average of all the response factors

 $\Sigma$  = the sum of all the individual values

2. Linear Regression

y=mx+b

a. Slope (m)

 $\mathbf{m} = (\mathbf{n} \Sigma \mathbf{x}_i \mathbf{y}_i - (\mathbf{n} \Sigma \mathbf{x}_i)^* (\mathbf{n} \Sigma \mathbf{y}_i)) / (\mathbf{n} \Sigma \mathbf{x}_i^2 - (\Sigma \mathbf{x}_i)^2)$ 

b. Intercept (b)

 $b = y_{AVE} - m^*(x_{AVE})$ 

c. Correlation Coefficient (cc)

$$CC(r) = \{ \Sigma((x_i - x_{ave})^*(y_i - y_{ave})) \} / \{ SQRT((\Sigma(x_i - x_{ave})^2)^*(\Sigma(y_i - y_{ave})^2)) \}$$

Or

CC

CC (r) =[
$$(\Sigma w * \Sigma w x y) - (\Sigma w x * \Sigma w y)$$
] / (sqrt( ( [ $(\Sigma w * \Sigma w x^2) - (\Sigma w x * \Sigma w x)$ ] \* [ $(\Sigma w * \Sigma w y^2) - (\Sigma w y * \Sigma w y)$ ])))]

d. Coefficient of Determination

 $COD(r^2) = CC^*CC$ 

Where:

 $y = Response (Area) Ratio A_x/A_{is}$ 

 $x = Concentration Ratio C_x/C_{is}$ 

m = slope

b = intercept

n = number of replicate x, y pairs

 $x_i$  = individual values for independent variable

y<sub>i</sub> = individual values for dependent variable

 $\Sigma$  = the sum of all the individual values

xave = average of the x values

 $y_{ave}$  = average of the y values

w = weighting factor, for equal weighting w=1

 $\Sigma$  = the sum of the values indicated



3./ Quadratic Regression

 $y = ax^2 + bx + c$ 

a. Coefficient of Determination

$$COD (r^{2}) = (\Sigma(y_{i}-y_{ave})^{2} - \{[(n-1)/(n-p)] * [\Sigma(y_{i}-Y_{i})^{2}]\}) / \Sigma(y_{i}-y_{ave})^{2}$$

Where:

 $y = Response (Area) Ratio A_x/A_{is}$ 

 $x = Concentration Ratio C_x/C_{is}$ 

 $a = x^2$  coefficient

b = x coefficient

c = intercept

 $y_i$  = individual values for each dependent variable

 $x_i$  = individual values for each independent variable

 $y_{ave}$  = average of the y values

 $y_{ave}$  = average of the y values

n = number of pairs of data

p = number of parameters in the polynomial equation (I.e., 3 for third order, 2 for second order)

$$Yi = ((2^*a^*(C_x/C_{is})^2) - b^2 + b + (4^*a^*c))/(4a)$$

b. Coefficients (a,b,c) of a Quadratic Regression

 $a = S_{(x2y)}S_{(xx)}-S_{(xy)}S_{(xx2)} / S_{(xx)}S_{(x2x2)}-[S_{(xx2)}]^{2}$ 

 $b = S_{(xy)}S_{(x2x2)} - S_{(x2y)}S_{(xx2)} / S_{(xx)}S_{(x2x2)} - [S_{(xx2)}]^2$ 

 $c = [(\Sigma yw)/n] - b^*[(\Sigma xw)/n] - a^*[\Sigma(x^2w)/n]$ 

Where:

n = number of replicate x,y pairs x = x values y = y values w =  $S^{-2} / (\Sigma S^{-2}/n)$   $S_{(xx)} = (\Sigma x^2 w) - [(\Sigma xw)^2 / n]$   $S_{(xy)} = (\Sigma xyw) - [(\Sigma xw)^*(\Sigma yw) / n]$   $S_{(x22)} = (\Sigma x^3 w) - [(\Sigma x^2 w)^*(\Sigma yw) / n]$   $S_{(x222)} = (\Sigma x^2 yw) - [(\Sigma x^2 w)^*(\Sigma yw) / n]$   $S_{(x222)} = (\Sigma x^4 w) - [(\Sigma x^2 w)^2 / n]$ Or If unweighted calibration, w=1  $S(xx) = (Sx2) - [(Sx)^2 / n]$   $S(xy) = (Sx2) - [(Sx)^*(Sy) / n]$   $S(x2y) = (Sx3) - [(Sx)^*(Sy2) / n]$   $S(x2y) = (Sx2y) - [(Sx2)^*(Sy) / n]$  $S(x22) = (Sx4) - [(Sx2)^2 / n]$ 



### 10.0 Data Reduction, Validation, Reporting, and Record Keeping

All data reported must be of the highest possible accuracy and quality. During the processes of data reduction, validation, and report generation, the work is thoroughly checked to insure that error is minimized.

### Data Reduction

The analyst who generated the data usually performs the data reduction. The calculations include evaluation of surrogate recoveries (where applicable), response factor calculations for manual calculations, and other miscellaneous calculations related to the sample guantitation.

If the results are computer generated, then the formulas must be confirmed by hand calculations.

### Validation

A senior analyst, most often the section supervisor, validates the data. All data undergoes peer review. If an error is detected it is brought to the analyst attention to rectify and further checks ensure that all data for that batch is sound. Previous and/or common mistake are stringently monitored throughout the validation process. Data is reported using appropriate significant figure criteria. In most cases, two significant digits are utilized, but three significant digits can be used in QC calculations. Significant digits are not rounded until after the last step of a sample calculation. All final reports undergo a review by the management to provide a logical review of all the results before they are released to the client.

If data is to be manually transferred from one medium to another, the transcribed data is checked by a peer. This includes data typing, computer data entry, chromatographic data transfer, data table inclusion to a cover letter, or when data results are combined with other data fields.

All hand written data from run logs, analytical standard logbooks, hand entered data logbooks, or on instrument generated chromatograms, are systematically archived should the need for future retrieval arise.

Data that is being reported is treated with the utmost respect and care to help eliminate errors. Unethical practices will be detected through peer review and be dealt with the utmost severity.

### Reports and Records

The reports are compiled by the Laboratory Information Management System (LIMS). Most data is transferred directly from the instruments to the LIMS. After being processed by the analyst and reviewed by the section supervisor, reports are approved and signed by the senior laboratory management. A comparative analysis of the data is performed at this point. For example, if TKN and NH3 are analyzed on the same sample the NH3 result should never be greater than the TKN result. Lab results and reports are released only to appropriately designated individuals. Release of the data can be by fax, email, diskette deliverables, or mailed hard copy.

When a project is completed, the project file folder is stored with a hard copy of the report, relevant supporting data, and the quality assurance/control worksheets. These folders are kept on file and are arranged by project number. Additionally, all electronic data is backed up daily on the HEAL main server. The backup includes raw data, chromatograms and report documents. Hard copies of chromatograms are stored separately according to the instrument and the analysis date. All records and analytical data reports are retained in a secure location as permanent records for a minimum period of five years (unless specified otherwise in a client contract). Access to archived information shall be documented with an access log. Access to archived electronic reports and data will be protected by a project manager password. In the event that HEAL transfers ownership or terminates business practices, complete records will be maintained or transferred according to the client's instructions.

After issuance, the original report shall remain unchanged. If a correction to the report is necessary, then an additional document shall be issued. This document shall have a title of "Addendum to Test Report or Correction to Original Report", or equivalent. Demonstration of original report integrity comes in two forms. First, the report date is included on each page of the final report. Second, each page is numbered in sequential order, making the addition or omission of any data page(s) readily detectable.

33.

### 11.0 Corrective Action

The limits that have been defined for data acceptability also form the basis for corrective action initiation. Initiation of corrective action occurs when the data generated from continuing calibration standard, sample surrogate recovery, laboratory control spike, matrix spike or sample duplicates exceed acceptance criteria. If corrective action is necessary, the analyst or the section supervisor will coordinate to take the following steps to determine and correct the measurement system deficiency:

Check all calculations and data measurements systems (Calibrations, reagents, instrument performance checks etc.).

Assure that proper procedures were followed.

Unforeseen problems that arise during sample preparation and/or sample analysis that lead to treating a sample differently from documented procedures shall be documented with a corrective action report. The section supervisor and lab manager shall be made aware of the problem at the time of the occurrence. See the SOP regarding departures from documented procedures.

Continuing calibration standards below acceptance criteria can not be used for reporting analytical data unless method specific criteria states otherwise.

An analyte above control limits in a Continuing Calibration may be acceptable if the previous continuing calibration standard was acceptable for that analyte. Further, the target analyte in the samples analyzed after the acceptable calibration standard and before calibration standard with the high bias, are reported as non-detected. Finally, the samples following an analyte that is above control limits for a continuing calibration standard can not be reported for that analyte.

Samples with non-compliant surrogate recoveries should be reanalyzed unless deemed unnecessary by the supervisor for matrix, historical data, or other analysis related anomalies.

Laboratory and Matrix Spike acceptance criteria vary significantly depending on method and matrix. Analysts and supervisors meet and discuss appropriate corrective action measures as spike failures occur.

Sample duplicates with RPD values outside control limits require supervisor evaluation and possible reanalysis.

A second mechanism for initiation of corrective action is that resulting from Quality Assurance performance audits, system audits, inter and intra-laboratory comparison studies. Corrective Actions initiated through this mechanism will be monitored and coordinated by the laboratory QA officer.

All corrective action forms are entered in the LIMs and included with the raw data for peer review, signed by the technical director of the section and included in the case narrative to the client whose samples were affected. All Corrective action forms in the LIMs are reviewed by the QA Officer.

# 12.0 Quality Assurance Audits, Reports and Complaints

# Internal/External Systems' Audits, Performance Evaluations, and Complaints

Several procedures are used to assess the effectiveness of the quality control system. One of the methods includes internal performance evaluations, which are conducted by the use of control samples, replicate measurements and use control charts. Another method is external performance audits, which are conducted by the use of inter-laboratory checks, such as participation in laboratory evaluation programs and performance evaluation samples available from a NELAC accredited Proficiency Standard Vendor.

Proficiency samples will be obtained twice per year from the appropriate vendor. We also participate in soil and water Underground Storage Tank PT studies. Copies of our results are available upon request.

Quality Assurance Audits are performed annually by the Quality Assurance Officer. They are performed using the guidelines outlined below:

The system audit consists of a qualitative inspection of the QA system in the laboratory and an assessment of the adequacy of the physical facilities for sampling, calibration, and measurement. This audit includes a careful evaluation and review of laboratory quality control procedures. Including but not limited to:

- 1. Review of staff qualifications, demonstration of capability, and personnel training programs
- 2. Storage and handling of reagents, standards and samples
- 3. Standard preparation logbook and LIMS procedures
- 4. Extraction logbooks
- 5. Raw data logbooks
- 6. Analytical logbooks or batch printouts and instrument maintenance logbooks
- 7. Data review procedures.
- 8. Corrective action procedures
- 9. Review of data packages is performed regularly by the lab manager/QA Officer.

The Quality Assurance Officer will conduct these audits on an annual basis. Performance evaluation will, in part, be based upon the results obtained on the proficiency results.

### Complaints

Complaints from clients are documented and given to the laboratory manager. The lab manager shall review the information and contact the client. If doubt is raised concerning the laboratories policies or procedures, then an audit of the section or sections may be performed. All records of complaints and subsequent actions shall be maintained for 3 years unless otherwise stated.
#### Internal and External Reports

The Quality Assurance Officer is responsible for preparation and submission of quality assurance reports to the appropriate management personnel as problems and issues arise. These reports include the assessment of measurement systems, data precision and accuracy, and the results of performance and system audits. Additionally, they also include significant QA problems, corrective actions, and recommended resolution measures. Reports of these Quality Assurance Audits describe the particular activities audiled, procedures utilized in the examination and evaluation of laboratory records, and data validation procedures. Finally, there are procedures for evaluating the performance of Quality Control and Quality Assurance activities, and laboratory deficiencies and the implementation of corrective actions with the review requirements.

### 13.0 Analytical Protocols Utilized at Hall Environmental Analysis Laboratory, Inc.

- 1. <u>Standard Methods for the Examination of Water and Wastewater:</u> AOHA, AWWA, and WPCG; 20th Edition, 1999.
- 2. <u>Methods for Chemical Analysis of Water and Wastes</u>, USEPA, EPA-600/4-79-020, March 1979 and as amended December, 1982 (EPA-600/4-82-055)
- 3. <u>Test Methods for Evaluating Solid Waste: Physical/Chemical Methods</u>, USEPA SW-846, 3rd Edition, Updates I, II, IIA, IIB, III, December, 1996.
- 4. <u>Methods of Soil Analysis</u>: Parts 1 & 2, 2nd Edition, Agronomy Society of America, Monograph 9
- 5. <u>Diagnosis & Improvement of Saline & Alkali Soils</u>, Agriculture Handbook No. 60, USDA, 1954
- 6. <u>Handbook on Reference Methods for Soil Testing</u>, The Council on Soil Testing & Plant Analysis, 1980 and 1992
- 7. Field and Laboratory Methods Applicable to Overburdens and Mine Soils, USEPA, EPA-600/2-78-054, March 1978
- 8. <u>Laboratory Procedures for Analyses of Oilfield Waste.</u> Department of Natural Resources, Office of Conservation, Injection and Mining Division, Louisiana, August 1988
- 9. <u>Soil Testing Methods Used at Colorado State University for the Evaluation of Fertility,</u> <u>Salinity and Trace Element Toxicity,</u> Technical Bulletin LT B88-2 January, 1988
- 10. <u>Manual of Operating Procedures for the Analysis of Selected Soil, Water, Plant Tissue and</u> <u>Wastes Chemical and physical Parameter.</u> Soil, Water, and Plant Analysis Laboratory, Dept. of Soil and Water Science, The University of Arizona, August 1989
- 11. <u>Sampling Procedures and Chemical Methods in Use at the U.S. Salinity Laboratory for</u> <u>Characterizing Salt-Affected Soils and Water.</u> USDA Salinity Laboratory.
- 12. <u>Procedures for Collecting Soil Samples and Methods of Analysis for Soil Survey.</u> USDA Soil Conservation Service, SSIR No. 1.
- 13. <u>Soil Survey Laboratory Methods Manual.</u> Soil Survey Laboratory Staff. Soil Survey Investigations Report No. 42, version 2.0, August 1992.
- 14. <u>Methods for the Determination of Metals in Environmental Samples</u>, USEPA, EPA-600/4-91-010, June 1991
- 15. The Merck Index, Eleventh Edition, Merck & Co., Inc. 1989.
- 16. Handbook of Chemistry and Physics, 62nd Edition, CRC Press, Inc. 1981-1982.

- 17. <u>Analytical Chemistry of PCB's</u>. Erickson, Mitchell D., CRC Press, Inc. 1992.
- 18. <u>Environmental Perspective on the Emerging Oil Shale Industry</u>, EPA Oil & Shale Research Group.
- 19. Polycyclic Aromatic Hydrocarbons in Water Systems, CRC Press, Inc.

# Appendix A





# Oregon Environmental Laboratory Accreditation Program

# nélap

Department of Agriculture, Laboratory Division Department of Environmental Quality, Laboratory Division Department of Human Services, Public Health Laboratory

#### **ORELAP Fields of Accreditation**

Nitrite

Sulfate

Orthophosphate as P

1835 1870

2000

#### Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Suile D Albuquerque, NM, 87109

MATRIX: Drinking Water

<u>Reference</u>

EPA 160.1

Issue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusolmers: Please venity the current accreditation standing with ORELAP.

Code

10009208

Public Health Laboratory 1717 SW 10th Avenue Portland, OR 97201 NELAP Recognized (503) 229-5505 FAX (503) 229-5682 TTY (503) 731-4031

> ORELAPID: NM100001 EPACode: NM00001

Certificate: NM100001-005

Analyto Code Analyte 1955 Residue-filterable (TDS) EPA 200.7 10014003 ICP - metals Analyte Code Analyte 1000 Aluminum Antimony 1005 1010 Arsenic Badum 1015 1020 Beryllium 1025 Boroa 1030 Cadmium Chromlum 1040 1055 Copper tron 1070 1075 Lead Manganese 1090 Molybdenum 1100 1105 Nickel Selenium 1140 1150 Silver Tin 1175 1180 Titanlum Vanadium 1185 Zinc 1190 EPA 245.1 10036609 Mercury by Cold Vapor Alomic Absorption Analyte Code Analyte 1095 Mercury 10053006 lon chromelography - enions. EPA 300.0 Analyte Code <u>Analyte</u> Chloride 1575 Fluoride 1730 1810 Nitrate as N

Description

Total Dissolved Solids, dried @ 180 C.

Page 1 of 14

41

Certificate: NM100001-005

Page 2 of 14

#### Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Suite D Albuquerque, NM, 87109

Issue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusoimers: Please verify the current accreditation standing with ORELAP.

EPA 415.1	10078407	Organic carbon - Combustion or Oxidation
Analyte Code	Analyte	
2040	Total Organic Carbon	
EPA 5030B	10153409	Purge and trap for aqueous samples
Analyte Code	Analyte	
125	Extraction/Preparation	
EPA 504.1	10083008	EDB/DBCP/TCP micro-extraction, GC/ECD
Analyte Code	Analyte	
4570	1,2-Dibromo-3-chiaropropane (DBCP)	
4585	1,2-Dibromoethane (EDB, Ethylene d	bramide)
EPA 524.2	10088809	Volatile Organic Compounds GC/MS Capillary Column
Analyte Code	Annivte	
5105	1,1,1,2-Tetrachloroethane	
5160	1,1,1-Trichlorcethane	
5110	1,1,2,2-Tetrachloroethane	
5165	1,1,2-Trichloroetinane	
4630	1,1-Dichloroethane	
4640	1,1-Dichlorosthyiane	
4670	1,1-Dichloropropene	
5155	1.2.4-Trichiorobenzene	
5210	1.2.4-Trimelhvibenzene	
4610	1.2-Dichlorobenzene	
4535	1.2-Dichiproelhane	
4655	1.2-Dichloropropane	
5215	1 3 5-Trimelbylbenzene	
4615	1.3-Dichlorobenzene	
4650	1.3-Dichieronene	
4620	1 4-Dichinmbenzene	
4535	2-Chlomtaluene	
4540	4-Chlomioluene	
5870	A-Isopropylloluene	•
4375	Вразеле	·
4300	Bromoshlarametiyane	
4350	Bromodichlaromethage	
4400	Bronsforu	
4400	Bramamathana (Mathul bramida)	
4930		
4433	Carbon Ionachionae	
. 4470	Chieralhana	
4905	Chippenane	
4500	Children attende	
105		
4040	us-1,2-Dichordeinyiene	
45/5		
4393		
4/65		
4835	nexactioroutaoieAe	
490D	isopropybenzene	
5000	weinyi ten-outyi ether (MTBE)	
4435	п-вијурелzепе	
5090		
4440	sec-butymenzene	

#### · ORELAP Fields of Accreditation

ORELAPID: NM100001 EPACode: NM00001

Certificate: NM100001-005

43

# Hall Environmental Analysis Laboratory, Inc.

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Issue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusotmers: Please verify the current accreditation standing with ORELAP.

5100	Styrene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydroluran (THF)
5140	Тошана
4700	trans-1,2-Dicloroethylene
4685	irans-1,3-Dichioropropylene
5170	Trichloroelhens (Trichloroethylene)
5175	Trichlorofluoromethane
5235	Vinyl chloride

	Page 3 of 14
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	 1

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#### Hall Environmental Analysis Laboratory, Inc.

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Reference	Code	Description
EPA 150.1	10008409	pH - Electrometric Measurement
Analyte Code	Analyte	
1900	pH	
EPA 160.1	10009208	Total Dissolved Solids, dried @ 180 C.
Analyte Code	Analyte	
1955	Residue-filterable (TDS)	
EPA 300.0	10053006	Ion chromatography - anlons.
Analyte Code	Analyte	
1540	Bramide	
1575	Chloride	
1730	Fluoride	
1810	Nitrale as N	
1840	Nilrite as N	
1870	Orthophosphate as P	
2000	Sulfate	
EPA JOOSA	10133207	Acid Digestion of waters for Total Recoverable or Dissolved Motals
Analyte Code	Analyte	
125	Extraction/Preparation	
EPA 3510C	10136202	Separatory Funnel Liquid-liquid extraction
Analyte Code	Analvte	
125	Extraction/Preparation	
EPA 50308	10153409	Purce and treo for equeous semples
Analyte Code	Analyte	
125	Extraction/Prenaration	
EPA 60108	10155609	ICP - AES
Analyte Code	Anaivte	
1000	Aluminum	
1005	Aniimmy	
1010	Arsenic	
1015	Barburn	
1075	Babilium	
1025	Baran	
1023	Catalum	
1035	Calcium	
1040	Chromburg	
1040	Caball	
1030	Louan Iren	
1070	non Lead	
1075	Leao	
1085	Magnesium	
1090	Wanganese	
1100	NDJybd2hUm	
1105	NICKEI	
1125	Polassium	
1740	Selenium	
1150	Silver	
1155	Sodium	
	The filling	
1165	1 Manual II	
1165	Tin	

Page 4 of 14



#### **ORELAP** Fields of Accreditation

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3035	Uranium		
1185	Vasedium		
1190	Zinc		
EPA 8016B	10173601	Non-halogenated organics using GC/FID	<u></u>
Analyte Code	Analyte		
9369	Diesel range organics (DRO)		
9408	Gasoline range organics (GRO)		
EPA 8021B	10174808	Aromatic and Halogenated Volatiles by GC with PID and/	or ECD Purge &
Analyte Code	Analyte	τ.	
5210	1,2,4-Trimethylbenzene		
5215	1,3,5-Trimethylbenzene		
4375	Benzene		
4765	Elhylbenzene		
5240	m+p-xylene		
5000	Melhyl tert-butyl ether (MTBE)		
5250	o-Xylene		
5140	Toluene		•
EPA 8081A	10178606	Organochlorine Pasticides by GC/ECD	· · · · · · · · · · · · · · · · · · ·
Analyte Code	Analyte	·	
7355 ·	4,4'-DDD		
7360	4.4'-DDE		
7365	4,4'-DDT		
7025	Aldrin		
7110	alpha-BHC (alpha-Hexachlorocyclol	nexane)	
7115	beta-BHC (beta-Hexachlorocyclohe	xane)	
7105	della-BHC		
7470	Dieldrin		
7510	Endosulfan I		
7515	Endosulfan II		
7520	Endosulfan sulfate		
7540	Endrin		
7530	Endrin aldehyde		
7120	gamma-BHC (Lindane, gamma-He)	kachlorocyclohexanE)	1
7685	Heplachlor		
7690	Heptachtor epoxide		
7810	Methoxychior		
EPA 8082	10179007	Polychlarinated Biphenyls (PCBs) by GC/ECD	;
Analyle Code	Analyle		
8880	Araciar-1016 (PCB-1016)		
8865	Araclor-1221 (PCB-1221)		
8890	Aracior-1232 (PCB-1232)		
8895	Arocior-1242 (PCB-1242)		
8900	Araclor-1248 (PCB-1248)		
8905	Araclor-1254 (PCB-1254)		
8910	Araclor-1260 (PCB-1260)	· ··· · ······························	
EPA 8260B	10184802	Volatile Organic Compounds by purga and trap GC/MS	
Analyte Code	Analyte		
5105	1,1,1,2-Tetrachloroethane		
5160	1,1,1-Trichloroethane		
5110	1,1,2,2-Tetrachloroethane		
5165	1,1,2-Trichloroelhane		

Page 5 of 14

Certificate: NM100001-005

Hall Environmental Analysis Laboratory, Inc.

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4630	1,1-Dichlorøethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimelhylbenzene
4570	1.2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1.2-Dichlorobenzene
4535	1.2-Dichlorosthane
4655	1.2-Dichloropropane
5215	1.3.5-Trimethylbenzene
4615	1.3-Dichlorobenzene
4660	1.3-Dichloropropane
4620	1.4-Dichlorobenzane
6380	1-Methvinschthalene
4665	2.2-Dichloropopage
4410	2-Bulanone (Methyl ethyl kelone, MEK)
4535	2-Chiorololuene
4860	2-Hexanne
6385	2-Mathvinaphthalene
4540	4-Chlorotoluene
4995	4-Melhyl-2-peniapone (MIBK)
4315	Acetone
4375	Benzene
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4400	Bramelarm
4950	Bromomethane (Methyi bromide)
445D	Carbon disulfide
4455	Camon tetrachloride
4475	Chlorobenzene
4485	Chloroethane
4505	Chieroform
105	Chloromethane
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichioropropene
4575	Dibromochloromethane
4595	Dibromomelhane
4625	DichlorodINuoromethane
4650	Dichloromethane (DCM, Methylene chloride)
4765	Ethylbenzene
4835	Hexachlorobuladiene
4900	Isopropylbenzene
5240	m+p-xylene
5000	Methyl teri-bulyl ether (MTBE)
5005	Naphihalene
4435	n-Bulylbenzene
5090	n-Propylbenzene

Page 6 of 14

16<sup>11</sup>

#### **ORELAP** Fields of Accreditation

# Hall Environmental Analysis Laboratory, Inc.

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5250	o-Xylene			
4910	p-isopropylioluene			
4440	sec-Butylbenzene			
- 5100	Styrene			
4445	tert-Butylbenzene			
5115	Tetrachloroethylene (Perchloroelhyle	ne)		
5140	Toluene			
4700	trans-1,2-Dicloroethylene			
4685	trans-1,3-Dichloropropylene			
5170	Trichioroethene (Trichioroethylene)			
5175	Trichlorofluoromethane			
5235	Vinyi chiaride			
5260	Xylene (total)			
EPA 8270C	10185805	SemiVolitile Organic compounds by GC/MS		
Analyte Code	Analyte			
5155	1,2,4-Trichlorobenzene			
4610	1,2-Dichloroberizene			
4615	1,3-Dichlorobenzene			
4620	1,4-Dichlorobenzene			
6835	2,4,5-Trichlorophenol			
6840	2,4,6-Trichlorophenol			
6000	2,4-Dichlorophenol			
6130	2,4-Dimethylphenol			
6175	2,4-Dinitrophenol			
6185	2,4-Dinitrololuene (2,4-DNT)			
6190	2,6-Dinitrotoluene (2,6-DNT)			
5795	2-Chloronaphthalene			
5800	2-Chlorophenol			
6385	2-Methylnaphthalene		· ·	
6400	2-Methylphenol (o-Cresol)			
6460	2-Niroaniline			
6490	2-Nirophenol		-	
6412	3 & 4 Methylphenol			
5945	3,3'-Dichlorobenzidine			
6465	3-Nilroaniline		-	
6140	4,6-Dinitro-2-methylphenol			
566D	4-Bromophenyl phenyl elher			
5700	4-Chloro-3-methylphenol			
5745	4-Chloroaniline			
5825	4-Chlorophenyl phenylether			
6470	4-Nitroanlline			
6500	4-Nitrophenol		•	1.
5500	Acenaphihene			
5505	Acenaphihylene			
5545	Aniline			
5555	Anthracene			
123	Azobenzene			
5575	Benzo[a]anihracene			
5580	Benzo[a]pyrene			
5585	Benzo[b]Iluoranthene			
559D	Benzo(g,h,i)perviene		;	

Page 7 of 14

ORELAPID: NM100001

EPACode: NMD0001

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 Issue Date:
 3/1/2007
 Expiration Date:
 2/29/2009

 As of 3/1/2007
 Itils list supercedes all previous lists for this certificate number.

 Cusolmers:
 Please verify the current accreditation slanding with ORELAP.

5600	Benzo[k]fluoranthene	
482	Benzofluoranthene	
5510	Benzolc acid	
5630	Benzyl alcohol	
5765	bls(2-Chloroethyl)ether	
5770	bis(2-Chloroethyloxymethane)	
5780	bis(2-Chloroisopropyl)ether	
6255	bis(2-Ethylhexyl)phlhalate (DEHP)	
5670	Bulyi benzyi phihalate	
5680	Carbazole	
5855	Chrysene	
5895	Dibanz[a,h]anthracene	
5905	Dibenzoluran	
6070	Diethyi phthalate	
6135	Dimethyl phthalate	
5925	Di-n-bulyi phthalate	
6200	Di-n-pcivi phihalate	
6265	Fluoranthene	
6270	Fluorene	
6275	Hexachlorobenzene	
4835	Hexachlorobutadiene	
6285	Hexachlorocyclopentadiene	
4840	Hexachloroelhane	
6315	Indeno[1,2,3-cd]ovrene	
6320	isophorone	
5005	Naphihalene	
5015	Nilrobenzene	
6535	n-Nitrosodiphenviamine	
6540	n-Nitrosodipropylamine	
6605	Pentachiorpohenoi	
6615	Phenanthrene	
6625	Phenol	
6665	Pyrene	
5095	Pyridine	
EPA 8310	10187607	Polynuciopr Ammaile Hydrocarbons by HPLC/UV-VIS
Analyte Code	Analvie	
6390	1-Methylnaphthalene	
6385	2-Methylnaphthalene	
3,5500	Acènaphthene	· · · · · · · · · · · · · · · · · · ·
5505	Acenaphthylene	
5555	Anthracene	
5575	Benzola)anthracene	
5580	Benzoja)pyrane	
5585	Benzolb)lluoranthene	
5590	Benzoig,h,Iperviene	
5600	Benzo(k)fivoran(hene	
5855	Chrysene	
5895	Dipenz(a,h)anthracene	
6265	Fluoranlhene	
6270	Fluorene	
6315	Indeno[1,2,3-cd]pyrene	

ORELAPID: NM100001 EPACode: NM00001

Certificate: NM100001-005

Page 8 of 14

48

#### Hall Environmental Analysis Laboratory, Inc.

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5005	Naphthalena
6515	Phenanihrene
6665	Pyrane

Page 9 of 14

49

-7

4901 Hawkins Rd. NE, Suile D Albuquerque, NM, 87109

Issue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 Illis list supercedes all previous lists for this certificate number. Cusolmers: Please verify the current accreditation standing with ORELAP.

Reference         Code         Description           EPA 3050A         10135407         Acid Digeslan of Sedments, Sludges, and soils           Auslvia Code         Analytic         Acid Digeslan of Sedments, Sludges, and soils           125         Extraction/Preparation         Extraction           PA 3680C         10140202         Soxhiet Extraction           Analytic Code         Analytic         Extraction/Preparation           EPA 3535         Extraction/Preparation         Extraction/Preparation           EPA 3535         Extraction/Preparation         Extraction for Volatille Organics in So           Analytic Code         Analytic         Closed-System Purge-and-Trap and Extraction for Volatille Organics in So           PA 60103         10155503         ICP - AES           Analytic Code         Analytic         Analytic           1000         Auminum         ICP - AES           Analytic Code         Analytic         Analytic           1010         Araenic         ICP - AES           Analytic Code         Analytic         ICP - AES	MATRIX: Solids		
EFA 380A 10135407 Acid Digestion of Sediments, Sludges, and soils Analyto Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analyte Code Analy	Reference	Code	Description
Analytic Code         Analytic 125         Extraction/Preparation           EPA 3840C         10140202         Soxhiel Extraction           Analytic Code         Analytic 125         Extraction/Preparation           EPA 3840C         Initiation         Pressuritzed Fluid Extraction (PFE) Analytic Code         Analytic Extraction/Preparation           EPA 305         10164004         Closed-System Purge-and-Trap and Extraction for Volatillo Organics in So Analytic Code           Analytic Code         Analytic Extraction/Preparation         ICP - AES           I005         Analytic Extraction/Preparation         ICP - AES           I006         Anilytic Internation         ICP - AES           I005         Analytic Extraction         ICP - AES           I006         Analytic Internation         ICP - AES           I007         Analytic Internation         ICP - AES           I008         Beryllum         ICP - AES           I009         Analytic Internation	EPA 3050A	10135407	Acid Digestion of Sediments, Studges, and soils
125         Extraction/Preparation           EPA 3360C         10140202         Soxhiet Extraction           Apalyin_Code         Analyze         Code           723         Extraction/Preparation         Extraction/Preparation           EPA 3364         1014004         Pressurtized Fluid Extraction (PFE)           Analyze         Extraction/Preparation         Extraction/Preparation           EPA 305         1014004         Closed-System Purge-and-Trap and Extraction for Volatile Organics in So           Analyze         Analyze         Analyze           123         Extraction/Preparation         Extraction/Preparation           EFA 6010B         10155603         ICP - AES           Analyze         Analyze         Analyze           1005         Attimum         10155603           1005         Attimum         1016           1005         Attimum         1016           1016         Arasinum         1016           1025         Boron         Extraction/Preparation           1030         Cadatum         104           1040         Chrornum         105           1055         Capper         107           1065         Attageselum         1016	Analvie Code	Analyte	
EPA 3540C         10140202         Soxhiet Extraction           Analyte Cade         Analyte         Extraction/Preparation           EPA 3545         10140804         Pressurtzed Fluid Extraction (PFE)           Analyte Cade         Analyte         Analyte           125         Extraction/Preparation         Extraction/Preparation           EPA 3535         10154004         Closed-System Purge-and-Trap and Extraction for Voiatile Organics in So           Analyte Cade         Analyte Cade         Analyte Cade           125         Extraction/Preparation         Extraction/Preparation           FPA 60101         10155500         ICP - AES           Analyte Cade         Analyte Cade         Analyte Cade           Analyte Cade         Analyte Cade         Analyte Cade           1000         Aluminum         ICP - AES           1011         Arsenic         ICP - AES           1020         Beryllum         ICP - AES           1021         Beryllum         ICP - AES           1022         Beryllum         ICP - AES           1035         Cabelum         ICP - AES           1040         Chremium         ICP - AES           1055         Copper         ICP - AES           I075<	125-	Extraction/Preparation	
Analytic Code     Analytic       125     Etraction/Preparation       EPA 3345     10140804     Pressurtzet Fluid Extinction (PFE)       Analytic Code     Analytic     Closed-System Purga-and-Trap and Extinction for Volatilia Organics in So       Analytic Code     Analytic     Closed-System Purga-and-Trap and Extinction for Volatilia Organics in So       Analytic Code     Analytic     Closed-System Purga-and-Trap and Extinction for Volatilia Organics in So       Analytic Code     Analytic     Closed-System Purga-and-Trap and Extinction for Volatilia Organics in So       Analytic Code     Analytic     Closed-System Purga-and-Trap and Extinction for Volatilia Organics in So       Analytic Code     Analytic     Closed-System Purga-and-Trap and Extinction for Volatilia Organics in So       Analytic Code     Analytic     Closed-System Purga-and-Trap and Extinction for Volatilia Organics in So       Analytic Code     Analytic     Closed-System Purga-and-Trap and Extinction for Volatilia Organics in So       Analytic Code     Analytic     Closed-System Purga-and-Trap and Extinction for Volatilia Organics in So       1020     Barium     10155509     ICP - AES       1030     Catentum     Intel So       1030     Catentum     Intel So       1040     Chromhum     Intel So       1055     Copper     Intel So       1065     Magnesium	EPA 3540C	10140202	Soxhiet Extraction
125         Extraction/Preparation           EPA 3s45         10140804         Pressurizad Fluid Extinction (PFE)           Analyte Cade         Analyte         Extraction/Preparation           EPA 5035         10154004         Closed-System Purge-and-Trap and Extraction for Volatile Organics in So           Analyte Cade         Analyte         Closed-System Purge-and-Trap and Extraction for Volatile Organics in So           Analyte Cade         Analyte         Closed-System Purge-and-Trap and Extraction for Volatile Organics in So           Analyte Cade         Analyte         Closed-System Purge-and-Trap and Extraction for Volatile Organics in So           Analyte Cade         Analyte         Closed-System Purge-and-Trap and Extraction for Volatile Organics in So           Analyte Cade         Analyte         Closed-System Purge-and-Trap and Extraction for Volatile Organics in So           Analyte Cade         Analyte         Closed-System Purge-and-Trap and Extraction for Volatile Organics in So           Analyte Cade         Analyte         Closed-System Purge-and-Trap and Extraction for Volatile Organics in So           Analyte Cade         Analyte         Trap and Extraction for Volatile Organics in So           Analyte Cade         Analyte         Trap and Extraction for Volatile Organics in So           1025         Goron         Closed-System Purge-and-Trap and Extraction for Volatile Organics	Analyte Code	Analyte	
EPA.545     10140804     Pressurtized Fluid Extinction (PFE)       Analyto Code     Analyto       126     Extraction/Preparation       EPA.5035     10154004       Closed-System Purge-and-Trap and Extraction for Volatile Organics in So       Analyte Code     Analyte       126     Extraction/Preparation       EPA.60108     Analyte       1000     Aurrituicm       1005     Analyte       1006     Antimany       1015     Barium       1025     Boron       1030     Cadmium       1032     Cadmium       1033     Cadmium       1040     Chromum       1055     Copper       1070     Iran       1070     Iran       1085     Copper       1070     Iran       1085     Magnealum       1090     Magnealum       1091     Magnealum       1092     Bagnealum       1093     Cadastion       1094     Chromum       1095     Copper       1077     Iran       1100     Molybdonum       1105     Nickel       1125     Potassium       1155     Sodium       1155     Sodium    <	125	Extraction/Preparation	
Analytic Carde       Analytic         125       Extraction/Preparation         EPA \$935       10154004       Closed-System Purge-and-Trap and Extraction for Valatile Organics in So         Analytic Carde       Analytic       10155809       ICP - AES         Analytic Carde       Analytic Carde       Analytic Carde       Analytic Carde         Analytic Carde       Analytic Carde       ICP - AES         Analytic Carde       Analytic Carde       Analytic Carde         Analytic Carde       Analytic Carde       Analytic Carde         1005       Antimany       ICP - AES         1010       Averice       ICP - AES         Analytic Carde       Analytic Carde       ICP - AES         1020       Beryllium       ICP - AES         1015       Barium       ICP - AES         1020       Beryllium       ICP - AES         1021       Barium       ICP - AES         1022       Beryllium       ICP - AES         1023       Cardenium       ICP - AES         1024       Beryllium       ICP - AES         1025       Boran       ICP - AES         1026       Boran       ICP - AES         1027       Boran       ICP - AES <td>EPA 3545</td> <td>10140804</td> <td>Pressurized Fluid Extraction (PFE)</td>	EPA 3545	10140804	Pressurized Fluid Extraction (PFE)
125         Extraction/Preparation           EPA 5035         10154004         Closed-System Purga-and-Trap and Extraction for Volatile Organics in So Analyte Code           125         Extraction/Preparation         EPA 60108         10155509           EPA 60108         Analyte         10155509         ICP - AES           1000         Alumitatom         1005         Analyte           1000         Anitive Code         Analyte         1015           1000         Aumitatom         1005         Anitive Code           1000         Aumitatom         1005         Anitive           1000         Aumitatom         1015         Barium           1020         Beryllium         1016         1016           1020         Beryllium         1016         1016           1030         Cadmium         1020         Echaction           1030         Cadmium         1030         Cadmium           1040         Chitomium         1040         Chitomium           1055         Copper         1070         tran           1070         tran         1016         Malybdonum           1105         Nickel         1125         Potaselum           1140         Sal	Analyte Code	Analyte	
EPA 5935     10154004     Closed-System Purge-and-Trap and Extraction for Volatille Organics in So       Analyte Cade     Analyte     Closed-System Purge-and-Trap and Extraction for Volatille Organics in So       Analyte Cade     Analyte     10155609     ICP - AES       Analyte Cade     Analyte     Analyte     Closed-System Purge-and-Trap and Extraction for Volatille Organics in So       Analyte Cade     Analyte     10155609     ICP - AES       Analyte Cade     Analyte     Closed-System Purge-and-Trap and Extraction for Volatille Organics in So       Analyte Cade     Analyte     Closed-System Purge-and-Trap and Extraction for Volatille Organics in So       Analyte Cade     Analyte     ICP - AES       Analyte Cade     Analyte     ICP - AES       Analyte Cade     Analyte     ICP - AES       I015     Barium     ICP - AES       I020     Beryllium     ICP - AES       I021     Beron     ICP - AES       I022     Beron     ICP - AES       I025     Cadenium     ICP - AES       I030     Cadenium     ICP - AES       I055     Cabelum     ICP - AES       I055     Cabelum     ICP - AES       I065     Magnestum     ICP - AES       I065     Magnestum     ICP - AES       I065     Magnestum </td <td>125</td> <td>Extraction/Preparation</td> <td></td>	125	Extraction/Preparation	
Analytic Code         Analytic           125         Extraction/Preparation           FPA 60100         10155509         ICP - AES           Analytic Code         Analytic         1000           1000         Aluminum         1000           1000         Aluminum         1000           1000         Animany         1000           1011         Arsenic         1000           1012         Barium         1000           1020         Baryllum         1025           1020         Baryllum         1025           1021         Baryllum         1025           1022         Baryllum         1025           1030         Cadmium         1030           1030         Cadmium         1030           1040         Chromlum         1030           1055         Copper         1016           1070         Iren         1010           1085         Magnesium         1010           1090         Manganese         1010           1100         Molybidomurn         1016           1145         Sillcan         1140           1145         Sillcan         1141	EPA 5035	10154004	Closed-System Purge-and-Trap and Extraction for Volatile Organics in So
125         Exitacion/Preparation           EPA 6010BI         10155609         ICP - AES           Analyta Cada         Analyta         ICP - AES           1000         Aluminum         ICP - AES           1005         Anlimany         ICP - AES           1005         Anlimany         ICP - AES           1005         Anlimany         ICP - AES           1015         Barium         ICP - AES           1016         Analyta         ICP - AES           1017         Barium         ICP - AES           1015         Barium         ICP - AES           1020         Beryllum         ICP - AES           1021         Beryllum         ICP - AES           1022         Beron         ICP - AES           1023         Cadmium         ICP - AES           1024         Chromlum         ICP - AES           1055         Cabalt         ICP - AES           1055         Capper         ICP - AES           1050         Manganese         ICP - AES           1105         Nickel         ICP - AES           1125         Potassium         ICP - AES           1140         Selenium         ICP - AES	Analyte Code	Analyte	
EPA 6010E         10155603         ICP - AES           Analyte Carde         Analyte           1000         Aluminum           1005         Antimany           1010         Arsenic           1011         Barlum           1020         Beryllium           1025         Boron           1020         Beryllium           1025         Boron           1030         Cadmlum           1035         Calcium           1040         Chromium           1055         Copper           1070         Iron           1075         Lead           1085         Magnesium           1090         Mangenese           1100         Molybdarum           1105         Nickel           1125         Potassium           1140         Selenhum           1150         Silver           1152         Soldurn           1180         Titanium           1190         Titanium           1191         Titanium           1192         Zinc           EPA 7471A         10158208           Mercury in Solid Wasta by Cold Vapor Atomic Absorption <td>125</td> <td>Extraction/Preparation</td> <td></td>	125	Extraction/Preparation	
Analytic Cade         Analytic           1000         Aluminum           1005         Aluminum           1005         Animany           1010         Arsenic           1011         Barium           1020         Beryllum           1020         Beryllum           1020         Beryllum           1021         Boren           1022         Beren           1023         Cadmium           1024         Chronium           1025         Catalum           1026         Chronium           1027         Catalum           1028         Cabalt           1029         Capper           1070         Iran           1075         Lead           1085         Copper           1075         Lead           1080         Manganese           1100         Molybdranum           1105         Nickel           11125         Polassium           1125         Polassium           1140         Selenium           1141         Silicon           1145         Silicon           1155         Sodium <td>EPA 60108</td> <td>10155609</td> <td>ICP - AES</td>	EPA 60108	10155609	ICP - AES
1000         Aluminum           1005         Anlimeny           1016         Arisenic           1017         Barium           1020         Beryllum           1021         Beryllum           1022         Beryllum           1023         Boren           1024         Beryllum           1025         Boren           1030         Cadmium           1035         Calcium           1040         Chromlum           1055         Copper           1075         Lead           1075         Lead           1080         Magneedum           1081         Magneedum           1082         Magneedum           1085         Nickel           1105         Nickel           1106         Molybdonum           1107         Nickel           11125         Potassium           1140         Salernium           1143         Salernium           1145         Saliuen           1156         Scalum           1157         Th           1180         Tianlum           1190         Zinc <td>Analyte Code</td> <td>Analyte</td> <td></td>	Analyte Code	Analyte	
1005       Anilmany         1010       Arsenic         1015       Barium         1020       Beryllum         1021       Beryllum         10225       Boron         10230       Cadmum         10240       Cadrum         1025       Calcium         1026       Cabron         1027       Cadrum         1028       Cabron         1029       Cabron         1020       Cabron         1021       Cabron         1022       Cabron         10230       Cabron         1024       Chromlum         1025       Cabron         1026       Cabron         1027       Lead         1028       Manganese         1109       Molybdianum         1105       Nickel         1125       Polasium         1126       Salenium         1145       Silleon         1145       Silleon         1145       Saldum         1150       Tha         1180       Thalium         1180       Thalium         1180       Thalium </td <td>1000</td> <td>Aluminum</td> <td></td>	1000	Aluminum	
1010       Arsenic         1015       Barium         1020       Beryllum         1021       Borton         1022       Borton         1023       Cadmium         1024       Chromulum         1025       Calcium         1026       Chromulum         1027       Cabalt         1028       Cobalt         1050       Cabalt         1055       Copper         1076       Iran         1077       Iran         1078       Magnestum         1095       Magnestum         1095       Mangenese         1100       Molybidenum         1105       Nickel         1125       Potasslum         1145       Silicon         1145       Silicon         1145       Silicon         1145       Salimum         1145       Silicon         1180       Tilanium         3035       Uranium         1180       Tilanium         3185       Vanatium         1180       Tilanium         1180       Tilanium         1180       Til	1005	Antimony	
1015       Barium         1020       Beryllium         1025       Boron         1030       Cadmun         1031       Cadmun         1032       Cadmun         1033       Cadromun         1034       Chiramlum         1035       Calcium         1040       Chiramlum         1050       Cobalt         1055       Copper         1076       Iran         1075       Lead         1085       Magnestum         1090       Manganese         1100       Molybdomum         1125       Polassium         1105       Nickel         1125       Polassium         1145       Silicon         1145       Silicon         1145       Silicon         1145       Silicon         1155       Sodium         1155       Sodium         1155       Sodium         1156       Sodium         1157       Tin         1158       Vanadium         1150       Zinc         EPA 7471 /A       10165208       Mercury in Solid Waste by Cold Vaper Atomic Absor	1010	Arsenic	
1020       Beryllium         1025       Boron         1030       Cadmium         1035       Calcium         1040       Chromium         1050       Cabalt         1050       Cabalt         1055       Copper         1070       fron         1075       Lead         1085       Magnesium         1085       Magnesium         1100       Molybdenum         1105       Nickel         1105       Nickel         1125       Potassium         1140       Salenhum         1150       Silican         1150       Silican         1155       Thallium         1165       Thallium         1185       Sadium         1185       Vanadium         1185       Vanadium         1185       Vanadium         1185       Vanadium         1180       Tilsnium         1185       Vanadium         1185       Vanadium         1185       Vanadium         1185       Vanadium         1185       Vanadium         1185	1015	Barium	
Baron           1025         Baron           1030         Cadmium           1035         Calcium           1040         Chromhum           1055         Capper           1070         tran           1075         Lead           1085         Magnese           1085         Magnese           1100         Molybdenum           1125         Potassium           1126         Nickel           1127         Potassium           1128         Silver           1125         Potassium           1140         Selentum           1155         Sodium           1156         Sodium           1157         Tin           1158         Sodium           1159         Sodium           1150         Silver           1155         Sodium           1165         Tialium           1180         Tilanium           1180         Zinc           EPA 7471A         10165208           Mercury in Solid Waste by Cold Vapor Atomic Absorption           Analyte Code         Analyte           1095         Mercury     <	1020	Bervillum	
1030         Cadmium           1035         Calcium           1040         Chromium           1050         Cabalt           1055         Copper           1070         tran           1075         Lead           1085         Magneslum           1075         Lead           1080         Manganese           1100         Molybdenum           1105         Nickel           1125         Potasslum           1140         Selenium           1145         Silican           1145         Silican           1150         Silver           1153         Sodium           1145         Silican           1150         Silver           1155         Sodium           1165         Thalium           1175         Th           1180         Titanium           3035         Uranium           1180         Zine           EPA 7471A         10165208           Mercury in Solid Waste by Cold Vapor Atomic Absorption           Analyte Code         Analyte           1095         Mercury           EPA 80158	1025	Boron	
1035         Calcium           1040         Chromlum           1050         Cobalt           1051         Cobalt           1052         Copper           1070         tran           1075         Lead           1085         Magnestum           1090         Manganese           1100         Molybidanum           1105         Nickel           1125         Potasslum           1100         Molybidanum           11105         Nickel           1125         Potasslum           1140         Selenium           1141         Selenium           1145         Silican           1150         Silver           1155         Sodium           1165         Thallium           1175         Tin           1180         Tilanium           3035         Uranium           1190         Zinc           EPA 7471A         10165208           Mercury in Solid Waste by Cold Vapor Atomic Absorption           Analyte Code         Analyte           1095         Mercury           EPA 8015B         10173501	1030	Cadmium	
1040         Chromlum           1050         Cabalt           1055         Copper           1070         tran           1075         Lead           1085         Magnestum           1090         Manganese           1100         Molybidanum           1125         Potassium           1100         Molybidanum           1125         Potassium           1140         Selentum           1141         Selentum           1140         Selentum           1141         Selentum           1145         Silican           1150         Silver           1155         Sodium           1165         Thabilium           1175         Th           1180         Titanium           3035         Uranium           1180         Titanium           1190         Zinc           EPA 7471A         10186208         Mercury in Solid Wasta by Cold Vapor Atamic Absorption           Analytic Code         Analytic           1095         Mercury           EPA 8015B         10173801           Von-heiogenated organics using GC/FID	1035	Calcium	
1950         Cobalt           1050         Cobalt           1055         Copper           1070         from           1075         Lead           1085         Magnestum           1085         Magnestum           1090         Margenesee           1100         Molybdenum           1125         Potassium           1140         Selentum           1141         Selentum           1145         Silicon           1145         Silicon           1155         Sodium           1165         Thallium           1175         Th           1180         Tilanium           3035         Uranium           1190         Zinc           EPA 7471A         10185208         Mercury in Solid Waste by Cold Vapor Atomic Absorption           Analytic Code         Analytic         10173601           1095         Mercury         Non-helogenated organics using GC/FiD           Analytic Code         Analytic         Gasoline range organics (GRO)           9408         Gasoline range organics (GRO)         Solid Waste by Cold Vapor Atomic Absorption	1040	Changlum	
1055         Corpner           1070         tran           1075         Lead           1076         Magnese           1085         Magnese           1100         Molybalanum           1105         Nickel           1125         Potassium           1140         Selenium           1155         Sodum           1143         Selenium           1144         Selenium           1155         Sodum           1156         Sodum           1157         Thallium           1165         Thallium           1175         Th           1180         Tilanium           3035         Uranium           1180         Tilanium           1190         Zinc           EPA 7471A         10156208           Mercury In Solid Waste by Cold Vaper Atomic Absorption           Analytic Code         Analyte           1095         Mercury In Solid Waste by Cold Vaper Atomic Absorption           Analytic Code         Analyte           9369         Diesol range organics (DRO)           9408         Gasoline tange organics (GRO)	1050	Cribalt	
1025         Coppl.           1070         from           1075         Lead           1085         Magneslum           1090         Manganese           1100         Molybdanum           1105         Nickel           1125         Potassium           1145         Silicon           1145         Silicon           1150         Silver           1155         Sodium           1185         Thallium           1175         Tin           1185         Uranium           3035         Uranium           1180         Titanlum           3035         Uranium           1185         Vanadium           1190         Zinc           EPA 7471A         10166208           Mercury in Solid Wasta by Cold Vapor Atomic Absorption           Analyte Code         Analyte           1095         Mercury           EPA 760158         10173501           10173501         Non-hatogenated organics using GC/FiD           Analyte Code         Analyte           9369         Diesol range organics (GRO)	1055	Conner	
1075         Lead           1075         Lead           1085         Magnestum           1090         Manganese           1100         Molybidanum           1105         Nickel           1105         Nickel           1125         Potassium           1140         Selentum           1141         Selentum           1142         Silican           1143         Silican           1145         Silican           1150         Silver           1155         Sodium           1165         Thallium           1175         Tin           1180         Titanium           3035         Uranium           1185         Vanadium           1190         Zinc           EPA 7471A         10186208           Mercury in Solid Waste by Cold Vapor Atomic Absorption           Analyte Code         Analyte           1095         Mercury           EPA 8015B         10173501           10173501         Non-helogenated organics using GC/FID           Analyte Code         Analyte           9369         Diesol range organics (GRO)           9408	1020	tron	
1015         Lead           1085         Magneslum           1090         Manganese           1100         Molybdenum           1105         Nickel           1125         Potassium           1140         Selenium           1145         Silicon           1145         Silicon           1150         Silver           1155         Sodium           1165         Thallium           1175         Tin           1180         Tilanium           3035         Uranium           1180         Tilanium           1181         Vanadium           1182         Vanadium           1185         Vanadium           1190         Zinc           EPA 7471A         10186208           Mercury in Solid Waste by Cold Vapor Atomic Absorption           Analyte Code         Analyte           1095         Mercury           EPA 6015B         10173601           Non-hetogenaled organics using GC/FiD           Analyte Code         Analyte           9365         Diesol range organics (DRO)           9408         Gasoline tange organics (GRO)	1075	Lead	
1000     Manganese       1100     Molybidarum       1105     Nickel       1125     Potassium       1140     Selenium       1145     Silicon       1145     Silicon       1150     Silver       1155     Sodium       1165     Thallium       1175     Th       1180     Titanium       3035     Uranium       1185     Vanadium       1190     Zinc       EPA 7471A     10166208       Analyte Code     Analyte       1095     Mercury In Solid Waste by Cold Vapor Atomic Absorption       Analyte Code     Analyte       1095     Mercury       EPA 8015E     10173601       Non-helogenated organics using GC/FID       Analyte Code     Analyte       9369     Diesol range organics (GRO)       9408     Gasoline range organics (GRO)	1085	Magneckum	
1030       Malybridse         1100       Malybridse         1100       Malybridse         1105       Nickel         1125       Potassium         1140       Selenium         1145       Sillcon         1150       Silver         1155       Sodium         1165       Thallium         1165       Thallium         1175       Th         1180       Tilanium         3035       Uranium         1185       Vanadium         1190       Zinc         EPA 7471A       10165208       Mercury in Solid Waste by Cold Vapor Atomic Absorption         Analyte Code       Analyte       Mercury         1095       Mercury       Solid Waste by Cold Vapor Atomic Absorption         EPA 8015B       10173501       Non-haloganated organics using GC/FID         Analyte Code       Analyte       9369       Diesol range organics (DRO)         9408       Gasoline range organics (GRO)       Hercury	1000	Magazaga	
1100       Moyubalatin         1105       Nickel         1125       Potassium         1140       Selenium         1141       Selenium         1142       Silican         1143       Silican         1145       Silican         1150       Siliver         1155       Sodium         1165       Thallium         1165       Thallium         1175       Tin         1180       Tilanium         3035       Uranium         1185       Vanadium         1190       Zinc         EPA 7471A       1016620B       Mercury in Solid Waste by Cold Vapor Atomic Absorption         Analytic Code       Analytie         1095       Mercury         EPA 8015B       10173501         Non-helogenated organics using GC/FID         Analytic Code       Analytie         9369       Diesci range organics (DRO)         9408       Gasoline range organics (GRO)	1100	Malubrication	
1103       Mikel         1125       Potassium         1140       Selenium         1141       Selenium         1145       Silicon         1145       Silicon         1150       Silver         1155       Sodium         1165       Thallium         1175       Th         1180       Titanium         3035       Uranium         1185       Vanadium         1190       Zinc         EPA 7471A       10165208         Mercury in Solid Wasta by Cold Vapor Atomic Absorption         Analyte Code       Analyte         1095       Mercury         EPA 8015B       10173501         Non-helogenated organics using GC/FID         Analyte Code       Analyte         9369       Diesol range organics (DRO)         9408       Gasoline range organics (GRO)	1105	Maiphan	
1123     Potassion       1140     Salenium       1145     Silicon       1145     Silicon       1150     Silver       1155     Sodium       1165     Thallium       1175     Th       1180     Titanium       3035     Uranium       1185     Vanadium       1190     Zinc       EPA 7471A     10156208       Mercury in Solid Waste by Cold Vapor Atomic Absorption       Analyte Code     Analyte       1095     Mercury       EPA 8015B     10173501       Non-helogenated organics using GC/FID       Analyte Code     Analyte       9369     Diesot range organics (DRO)       9408     Gasoline range organics (GRO)	1105	Betaastum	
1140     Salentum       1145     Silicon       1145     Silicon       1150     Silver       1155     Sodium       1165     Thallium       1165     Thallium       1175     Th       1180     Titanium       3035     Uranium       1185     Vanadium       1190     Zinc       EPA 7471A     10156208       Mercury in Solid Waste by Cold Vapor Atomic Absorption       Analyte Code     Analyte       1095     Mercury       EPA 8015B     10173501       Non-helogenated organics using GC/FID       Analyte Code     Analyte       9369     Diesol range organics (DRO)       9408     Gasoline range organics (GRO)	1120	Polassium	
1145     Slicen       1150     Sliver       1155     Sodium       1165     Thallium       1165     Thallium       1175     Th       1180     Titanium       3035     Uranium       1185     Vanadium       1190     Zinc       EPA 7471A     10166208       Mercury in Solid Waste by Cold Vapor Atomic Absorption       Analyte Code     Analyte       1095     Mercury       EPA 8015B     10173601       Non-halogenated organics using GC/FID       Analyte Code     Analyte       9369     Diesol range organics (DRO)       9408     Gasoline range organics (GRO)	1140		
1150     Silver       1155     Sodium       1155     Sodium       1165     Thallium       1175     Th       1180     Titanium       3035     Uranium       1185     Vanadium       1190     Zinc       EPA 7471A     10185208       Mercury in Solid Waste by Cold Vapor Atomic Absorption       Analyte Code     Analyte       1095     Mercury       EPA 8015B     10173501       Non-halogenated organics using GC/F1D       Analyte Code     Analyte       9369     Diesol range organics (DRO)       9408     Gasoline range organics (GRO)	1140	Silust	
1133     Source       1165     Thallium       1175     Th       1175     Th       1180     Titanium       3035     Uranium       1185     Vanadium       1190     Zinc       EPA 7471A     10186208       Mercury in Solid Waste by Cold Vapor Atomic Absorption       Analyte Code     Analyte       1095     Mercury       EPA 8015B     10173601       Non-halogenated organics using GC/F1D       Analyte Code     Analyte       9369     Diesol range organics (DRO)       9408     Gasoline range organics (GRO)	1120	onver Cardium	
1100       Intainum         1175       Th         1176       Th         1180       Titanium         3035       Uranium         3185       Vanadium         1190       Zinc         EPA 7471A       10186208         Mercury in Solid Waste by Cold Vapor Atomic Absorption         Analyte Code       Analyte         1095       Mercury         EPA 8015B       10173601         Non-halogenated organics using GC/F1D         Analyte Code       Analyte         9369       Diesol range organics (DRO)         9408       Gasoline range organics (GRO)	1133		
1175       Im         1180       Titanium         3035       Uranium         3185       Vanadium         1190       Zinc         EPA 7471A       10185208         Mercury in Solid Waste by Cold Vapor Atomic Absorption         Analyte Code       Analyte         1095       Mercury         EPA 8015B       10173501         Analyte Code       Analyte         9369       Diesol range organics (DRO)         9408       Gasoline range organics (GRO)	7105	1 NAMUM	
Fraction     Transform       3035     Uranium       3035     Uranium       1185     Vanadium       1190     Zinc       EPA 7471A     10185208 <u>Analyte Code</u> <u>Analyte</u> 1095     Mercury       EPA 8015B     10173501 <u>Analyte Code</u> <u>Analyte</u> 9369     Diesol range organics (DRO)       9408     Gasoline range organics (GRO)	11/5	1m Theshum	
SUSS     Dranum       1185     Vanadium       1190     Zinc       EPA 7471A     10186208 <u>Analyte Code</u> <u>Analyte</u> 1095     Mercury       EPA 8015B     10173801 <u>Analyte Code</u> <u>Analyte</u> 9369     Diesol range organics (DRO)       9408     Gasoline range organics (GRO)	1180		
Instruct     Vanadium       1190     Zinc       EPA 7471A     10186208       Analyte Code     Analyte       1095     Mercury       EPA 8015B     10173801       Analyte Code     Analyte       9369     Diesol range organics (DRO)       9408     Gasoline range organics (GRO)	3035	Uranum Venedum	
List     Zinc       EPA 7471A     10166208     Mercury in Solid Waste by Cold Vapor Atomic Absorption       Analyte Code     Analyte       1095     Mercury       EPA 8015B     10173801       Analyte Code     Analyte       9369     Diesol range organics (DRO)       9408     Gasoline range organics (GRO)	2410	Vanadium	
EPA (4/1A     10166208     Mercury in Solid Waste by Cold Vapor Atomic Absorption       Analyte Code     Analyte       1095     Mercury       EPA 8015B     10173801       Analyte Code     Analyte       9369     Diesol range organics (DRO)       9408     Gasoline range organics (GRO)	1190	200	
Analyte Code     Analyte       1095     Mercury       EPA 8015B     10173801       Analyte Code     Analyte       9369     Diesol range organics (DRO)       940B     Gasoline range organics (GRO)	EPA 7471A	10166208	Mercury in Solid Waste by Cold Vapor Atomic Absorption
ID95         Mercury           EPA 8015B         10173801         Non-helogenaled organics using GC/FID           Analyte Code         Analyte           9369         Diesol range organics (DRO)           940B         Gasoline range organics (GRO)	Analyte Code	Anaivie	
EPA BUILBE     IUI/14BUI     Non-aelogenated organics using GC/FID       Analyte     Analyte       9369     Diesol range organics (DRO)       9408     Gasoline range organics (GRO)	1095	Mercury	
Analyte Cade     Analyte       9369     Diesol range organics (DRO)       9408     Gasoline range organics (GRO)	EPA BO15B	1073501	Non-nelogenated organics using GC/FID
9369     Diesor range organics (DRO)       9408     Gasoline range organics (GRO)	Analyte Code	Analyle	
9408 Gasoline lange organics (GRO)	9369	ulesci range organics (URO)	
	9408	Gasoline range organics (GRO)	

ORELAPID: NM100001 EPACode: NM00001

Certificate: NM100001-005

Page 10 of 14

#### **ORELAP** Fields of Accreditation

ORELAPID: NM100001 EPACode: NM00001

Cerlificate: NM100001-005

51

# Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd. NE, Sulte D Albuquerque, NM, 87109

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Issue Date: 3/1/2007 Expiration Date: 2/29/2008 As of 3/1/2007 this list supercedes all previous lists for this certificate number. Cusotmers: Please verify the current accreditation standing with ORELAP.

EPA 80218	10174809 Aromatic and Halogenated Volatiles by GC with PID and/or ECD Pume &
Analyte Code	Analyte
5210	1,2,4-Trimethylbenzene
5215	1,3,5-Trimethylbenzene
4375	Benzene
4765	Ethylbenzene
5240	m+d-xviene
5000	Methyl len-butyl ether (MTBE)
5250	a-Xvlene
5140	Toluene
5260	Xviene (total)
EPA BOBIA	10178606 Omanachlotine Pesticides by GC/ECD
Analyte Code	Analyte
7355	4.4'-DDD
7360	4.4'-DDF
7365	4.4'-DDT
7025	Aldrin
7110	ainha-BHC (alpha-Hexachlorocyclohexane)
7115	bela-BHC (bela-Hexachlorocyclohexane)
7105	della.RHC
7470	Dieldrig
7510	Endosulfan l
7515	Endoculian II
7520	Endosullan sullate
7540	Endesonan Sonais
7530	Endino
7120	namma.BHC () indiana, namma.Hevachinggyc(obavanE)
7685	yanıma-ona yanadıra, yanıma-nezadinin oyunnezaniz) Haninahlar
7600	
7050	
	10179007 Polychindnatad Rinhanyla /PCBa) by CC/ECD
Analida Codo	
AURIVIE CUDE	Ameler 1015 (DCB-1015)
9990	Ameler 1931 (BCB-1931)
8800	Anomer 1332 (008-1221)
8000	Anolog 1246 (F 00= 1242)
8005	Anotar-1254 (PCR-1254)
8010	
	10184802 Volatila Drandic Compounds by suma and imp GCB45
EFA 02000	Analida
STOP	<u>nuarre</u> 1.1.1.7.Tetrachianathana
5103	
5110	1,1,2 Teimehiorooliane
5110	
2103	1,1,2-1 ICINUIDENIBILE
4530	), j-Lichiordeinane
4640	1,1-Dichloreinylane
4670	1, 1-Lichioropropene
5150	1.2,3-Inchlorobenzene
5180	1,2,3-Trichloropane
5155	1,2,4-Trichlorobenzene

Page 11 of 14

#### Certificate: NM100001-005

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Hall Environmental Analysis Laboratory, Inc.

5210	1,2,4-Trimelhylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzane
4635	1,2-Dichioroelhane
4655	1,2-Dichloropropane
5215	1,3,5-Trimelhylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
6380	1-Methylnaphthalene
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4535	2-Chioratoluene
4860	2-Hexanone
6385	2-Melhyinaphlhalene
4540	4-Chloroioluane
4995	4-Methyl-2-pentanone (MIBK)
4315	Acelone
4375	Benzene
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromelhene
4400	Bromolorm
4950	Bromomethane (Methyl bromide)
4450	Carbon disulfide
4455	Carbon tetrachlutide
4475	Chlorobenzene
4485	Chloroelhane
4505	Chiorafarm
105	Chioromelhane
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4575	Dibromochloromethane
4595	Dibromomelhane
4625	Dichlorodifluoromethane
4650	Dichloromethane (DCM, Melhylene chloride)
4765	Ethylbenzene
4835	Hexachlorobutadlene
4900	Isopropylbenzene
5240	m+p-xylene
5000	Methyl terl-butyl ether (MTBE)
5005	Naphthalene
4435	n-Butylbenzene
5090	n-Propylbenzene
5250	o-Xylene
4910	p-lsoptopyliajuene
4440	sec-Bulylbenzene
5100	Styrene
4445	tert-Bulyibanzene
5115	Tetrachloroelinviene (Perchioroalhviene)
	,

Page 12 of 14



## **ORELAP** Fields of Accreditation

# Hall Environmental Analysis Laboratory, Inc.

4901 Hawkins Rd: NE, Sulle D Albuquerque, NM, 87109

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	5140	Toluene	
	4700	trans-1,2-Dicloroethylene	
	4685	trans-1,3-Dichloropropylene	
	5170	Trichtoraethene (Trichtoraethylene)	,
	5175	Trichlorofluoromethane	
	5235	Vinyl chloride	·
	5260	Xylene (total)	
EPA	8270C	10185805	SemiVolille Organic compounds by GC/MS
	Analyte Code	Analyte	· · · · · · · · · · · · · · · · · · ·
-	5155	1,2,4-Trichlorobenzene	
	4610	1,2-Dichlorobenzene	
	4615	1,3-Dichlorobenzene	
	4620	1,4-Dichlorobenzene	х.
	6835	2,4,5-Trichlorophenol	
	6840	2,4,6-Trichlorophenol	
	6000	2,4-Dichlorophenol	
	6130	2.4-Dimethylphenol	
	6175	2.4-Dinitrophenol	·
	6185	2.4-Dinitrololuene (2.4-DNT)	
	6190	2.6-Dinitratolvene (2,6-DNT)	
	5795	2-Chieronaphthalene	
	5800	2-Chlorophenol	
	6385	2-Melhvinaphthalene	
	6400	2-Methylphenol (o-Cresol)	
	6460	2-Nitroanlline	
	6490	2-Nitraphenol	
	6412	3 & 4 Methylphenol	
	5945	3,3'-Dichlorobenzidine	
	6465	3-Nitroaniline	· · · · · ·
	6140	4.6-Dinitro-2-methylphenol	
	5660	4-Bromophenvi phenvi ether	
	5700	4-Chioro-3-methylohenol	
	5745	4-Chloroaniline	
	5825	4-Chlorophenyl phenylether	
	6470	4-Nitroanlline	
	6500	4-Nitrophenol	
	5500	Acenaphthene	
	5505	Acenaphthylene	
	5545	Aniline	
	5555	Anthracene	
	123	Azabenzene	•
	5575	Benzo[a]anthracene	· ·
	5580	Banzo[a]pyrene	
	5585	Benzo(b)Nuoranthene	
	5590	Benzo(g,h,i]perylene	
	5610	Benzolc scid	
	5630	Benzyl alcohol	
	5760	bis(2-Chloroelhoxy)meliane	
	5765	bis(2-Chloroelhyl)ether	
	5780	bis{2-Chloroisopropyl)alher	
	6255	bis(2-Ethylhexyl)phthalate (DEHP)	

Page 13 of 14

EPACode: NM00001

Certificate: NM100001-005

ORELAPID: NM100001

53

4901 Hawkins Rd. NE, Suite D Albuquerque, NM, 87109

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 3/1/2007
 Expiration Date:
 2/29/2008

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 Cusolmers: Please verify the current accreditation standing with ORELAP.

5670	Bulyl benzyl phthalale	
5680	Carbazole	
5855	Chrysene	
5895	Dibenz[a,h]anthracene	
5905	Dibenzoluran	
6070	Diethyl phihalate	
6135	Dimethyl phthalate	
5925	Di-n-bulyi phthalale	
6200	Di-n-octyl phthalate	
6265	Fluoranthene	
6270	Fluorane	
6275	Hexachlorobenzene	
4835	Hexachlorobutadiene	
6285	Hexachlorocyclopentadiene	
4840	Hexachloroethane	
6315	Indena[1,2,3-cd]pyrene	
6320	(sophorone	
5005	Naphlhalene	
5015	Nitrobenzene	
6530	n-Nitrosodimethylamine	
6535	n-Nitrosodiphenylamine	
6540	n-Nitrosodipropylamine	
6605	Pentachlorophenol	
6615	Phenanthrene	
6625	Phenol	
6665	Pyrene	
5095	Pyridine	
EPA 8310	10187607	Polynuclear Aromatic Hydrocarbons by HPLC/UV-VIS
Analyte Code	Analyte	
6380	1-Meihyinaphihalene	
6385	2-Mathyinaphthalene	
5500	Acenaptilhene	
5505	Acenaphthylene	

ORELAPID: NM100001 EPACode: NM00001

Certificate: NM100001-005

54

5555

5575

5580 5585

5590

5600

5855 5895

6265

6270 6315

5005

6615 6665 Anthracene

Chrysene

Fluorene

Pyrene

Phenanihrene

Benzo(a)anthracene Benzo(a)pyrene

Benzo(b)Nuoranthene

Benzo(g,h,i)perylene Benzo(k)Nuoranthene

Dibenzja,h]anthracene Fluoranthene

Indeno[1,2,3-cd]pyrene Naphihaiene

Page 14 of 14

Office of Luboratory Services Bureau of State Laboratory Services is in compliance with Environmental Laboratory's applicable standards for the State of Arizona and maintains on file a List of Parameters for which the laboratory is certified to perform analysis. Steven D. Baker, Chief ENVIRONMENTAL LABORATORY LICENSE PERIOD OF LICENSURE FROM: 10/20/2006 TO: 10/19/2007 Hall Environmental Analysis Laboratory Scott Hallenbeck Scott Hallenbeck AZ0682 Issued to: Laboratory Director: Owner/Representative: 

#### Arizona Department or nearth Services Office of Laboratory Licensure, Certification & Train 250 Horth 17th Avenue, Phoenix, AZ 85007

#### Thursday, September 7 2006

Z License: AZ0682

Director: Mr. Scott Hallenbeck

GAS CHROMATOGRAPH/MASS SPECTROMETER

MERCURY ANALYZER

INDUCTIVELY COUPLED PLASMA SPECTROMETER

Lab Name: Hall Environmental Analysis Laboratory Phone: (505) 345-3975 Fax: (505) 345-4107

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1

08/11/05

08/11/05

08/11/05

Program	F1\0/			. (303) 345-4107	
, rugiani				•	
	Parameter	EPA Method	Billing Code	Cert Date	
	Aluminum	EPA 6010B	MTL3	10/20/05	
	Arsenic	EPA 6010B	MTL3	10/20/05	
	Barium	EPA 6010B	MTL3	10/20/05	
	Beryllium	EPA 6010B	MTL3	10/20/05	
	C10-C32 Hydrocarbons	8015AZ	VOC4		
	Cadmlum	EPA 6010B	MTL3	10/20/05	
	Calcium	EPA 6010B	MTL3	10/20/05	
	Chromium Total	EPA 6010B	MTL3	10/20/05	
}	Copper	EPA 6010B	MTL3	10/20/05	
	Funnel Liquid-Liquid Extraction	EPA 3510C	•		
	Iron	EPA 6010B	MTL3	10/20/05	
	Lead	EPA 6010B	MTL3	10/20/05	
	Magnesium	EPA 6010B	MTL3	10/20/05	
	Manganese	EPA 6010B	MTL3	10/20/05 10/20/05 10/20/05	
1	Mercury	EPA 7470A	MTL5		
	Мегсигу	EPA 7471A	MTL5		
	Nickel	EPA 6010B	MTL3	10/20/05	
	Nonhalogenated Volatile Organics	EPA 8015B	VOC3	10/20/05	
	Polynuclear Aromatic Hydrocarbons	EPA 8310	SOC13		
	Potassium	EPA 6010B	MTL3	10/20/05	
	Pressurized Fluid Extraction	EPA 3545	•		
	Purge And Trap	EPA 5030B	•	10/20/05	
	Purge And Trap	EPA 5035	•	10/20/05	
	Sediments, Sludges And Solls	EPA 3050B	•	10/20/05	
	Selenium	EPA 60108	MTL3		
	Silver	EPA 6010B	MTL3	10/20/05	
	Sodium	EPA 6010B	MTL3	10/20/05	
	Total Recoverable In Water	EPA 3005A	•	10/20/05	
	Volatile Organics	EPA 8021B	VOC1	10/20/05	
	Volatile Organics	EPA 8260B	VOC8	10/20/05	
	Zinc	EPA 6010B	MTL3	10/20/05	
Total Licer	ised Parameters in this Program: 31				
Instrume	nts	Qı	Quantity		
GAS CHE	ROMATOGRAPH		2	09/06/0	

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56

Page:

1

#### Arizona Department of Health Services of I pratory Licensure, Certification & Train 250 North 17th Avenue, Phoenix, AZ 85007 Office of I

Thursday, September 7 2006

AZ License: AZ0682

Lab Name: Hall Environmental Analysis Laboratory

Softwares VARIAN STAR - GCMS

PERKIN ELMER - ICP

VARIAN GALAXIE AND CUSTOM WRITTEN-GC



.57



# Section 10.0 Chemical Analytical Reports

Title	Tab Number
Groundwater First Quarter 2007	6
Groundwater Second Quarter 2007	7
Soil Gas First Quarter 2007	8
Soil Gas Second Quarter 2007	9
GAC Analysis – January to June 2007	10

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HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505: 345: 3975 Fax 505: 345. 4107 www.hallenvironmental.com	310 (Method 504.1)         310 (Method 504.1)         310 (PVA or PAH)         310 (PVA or PAH)         310 (PVA or PAH)         310 (PVA or PAH)         3200 (PVA)         3210 (PVA)         3210 (PVA)         3210 (PVA)         3210 (PVA)         3210 (PVA)         3210 (PVA)         3210 (PVA)         3210 (PVA)         3210 (PVA)         3210 (PVA)         3210 (Semi-VOA)         3210 (Semi-VOA)         3210 (Semi-VOA)         3210 (Semi-VOA)         3210 (Semi-VOA)         3210 (Semi-VOA)	E     Image: Constraint of the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s	
	STEX + Hotel + TPH (Gasoline Only)         STEX + Method 8015B (GasyDiesel)		lemarks:
QA/QC Package:       Std Level 4       Other:       Project Name:       Project #:	Project Manager: <i>Circley H. unte.</i> ( Sampler: Sample Temperature: Number/Volume HEAL No. HEAL No.	нол и поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли в поли	Referenced By (Signature) 2-21-076 Received By: (Signature)
4.0F.CUSTODY RECORD AN JUAN REFINING	505-632- 371/2 87413 505-632- 371/2 The Matrix Sample I.D. No.	3:55 H20 GAC 1EFF 7:00 H20 GAC 2EFF	me: Relinquished By: (Signature) . 4 0 A. P. C. Ferd The Konne me: Relinquished By: (Signature)
Client: Shad	Phone #:	2-20-02-2	2-20-07

# Hall Environmental Analysis Laboratory, Inc.

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16

	Sample	Receipt Ch	ecklist		~	
Client Name SJR			Date and Time	e Received:	2/	21/2007
Work Order Number 0702230			Received by	/ GLS		
	21	2-21 Date	-07			
Matrix	Carrier name	UPS				
Shipping container/cooler in good condition?		Yes 🗹	No 🗌	Not Present		
Custody seals intact on shipping container/cooler?		Yes 🗹	No 🗌	Not Present	Not Shipped	
Custody seals intact on sample bottles?		Yes	No 🗌	N/A		
Chain of custody present?		Yes 🗹	No 🗀			
Chain of custody signed when relinquished and red	ceived?	Yes 🗹	No 🗌			. r
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 🗌			
Water - VOA vials have zero headspace?	No VOA vials subi	mitted	Yes 🗹	No 🗌		
Water - Preservation labels on bottle and cap mate	ch?	Yes	No 🗌	N/A 🔽		
Water - pH acceptable upon receipt?		Yes 🗌	No 🗌	N/A 🗹		
Container/Temp Blank temperature?	. '	3°	4° C ± 2 Accep	table		
COMMENTS:			If given sufficie	nt time to cool.		
						-
Client contacted E	ate contacted:		Pe	rson contacted		
Contacted by:	Regarding					
Comments				•		
		· · · · · · · · · · · · · · · · · · ·				
	t					
	······				· · · ·	
Corrective Action	· · · ·					· · · ·
	·					
·					······	

# QA/QC SUMMARY REPORT

Client: San Juan R	efining						
Project: GAC Analy	ysis 2-20-07					Work	<b>Order:</b> 0702230
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RP	DLimit Qual
Method: SW8015	<u> </u>					V	
Sample ID: MB-12370		MBLK			Batch ID: 12370	Analysis Date:	2/23/2007 10:43:54 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0				
Motor Oil Range Organics (MRO)	ND	mg/L	5.0				
Sample ID: LCS-12370		LCS			Batch ID: 12370	Analysis Date:	2/23/2007 11:16:51 AM
Diesel Range Organics (DRO)	5.880	mg/L	1.0	118	74 157		
Sample ID: LCSD-12370		LCSD			Batch ID: 12370	Analysis Date:	2/23/2007 11:51:15 AM
Diesel Range Organics (DRO)	5.742	mg/L	1.0	115	74 157	2.39 2	
Method: SW8015							
Sample ID: 0702230-02A MSD		MSD			Batch ID: R22553	Analysis Date:	2/21/2007 4:00:33 PM
Gasoline Range Organics (GRO)	0.5044	mg/L	0.050	101	80 115	1.77 8	.39
Sample ID: 5ML REAGENT BL	<b>A</b>	MBLK			Batch ID: R2255	Analysis Date:	2/21/2007 7:53:59 AM
Gasoline Range Organics (GRO)	ND	ma/L	0.050				
Sample ID: 2.5UG GRO LCS		LČS		•	Batch ID: R2255	Analysis Date:	2/21/2007 4:30:44 PM
Gasoline Range Organics (GRO)	0.5068	ma/L	0.050	101	80 115		
Sample ID: 0702230-02A MS		MS			Batch ID: R2255	Analysis Date:	2/21/2007 3:30:24 PM
Gasoline Range Organics (GRO)	0.5134	mg/L	0.050	103	80 115		
Method: SW8021							
Sample ID: 0702230-01A MSD		MSD			Batch ID: R2255	3 Analysis Date:	2/21/2007 2:29:59 PM
Benzene	22.09	µg/L	1.0	100	85.9 113	1.80	27
Toluene	20.12	µg/L	1.0	101	86.4 113	1.98	19
Ethylbenzene	20.26	µg/L	1.0	101	83.5 118	1.76	10
Xylenes, Total	60.96	μg/L	2.0	102	83.4 122	2.04	13
Sample ID: 5ML REAGENT BL	A	MBLK			Batch ID: R2255	3 Analysis Date:	2/21/2007 7:53:59 AM
Benzene	ND	µg/L	1.0				
Toluene	ND	µg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Sample ID: 100NG BTEX LCS		LCS			Batch ID: R2255	3 Analysis Date:	2/21/2007 3:00:13 PM
Benzene	20.89	µg/L	1.0	104	85.9 113		
Toluene	20.78	µg/L	1.0	104	86.4 113		
Ethylbenzene	20.89	µg/L	1.0	104	83.5 118		
Xylenes, Total	63.43	µg/L	2.0	106	83.4 122		
Sample ID: 0702230-01A MS		MS			Batch ID: R2255	3 Analysis Date:	2/21/2007 2:00:01 PM
Benzene	22.49	µg/L	1.0	102	85.9 113		
Toluene	20.52	µg/L	1.0	103	86.4 113		
Ethylbenzene	20.62	µg/L	1.0	103	83.5 118		
Xylenes, Total	62.22	µg/L	2.0	104	83.4 122		

Qual	ifiers:			
E	Value above quantitation range	Н	Holding times for preparation or analysis exceeded	
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	

R RPD outside accepted recovery limits

- Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

3/4

Date: 26-Feb-07

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Page 1

Analyses		Result	PQL Qual Units	DF	Date Analyzed
Lab ID:	0702230-02		Matr	ix: AQUE	EOUS
Project:	GAC Analysis 2-20-07		Date Receive	ed: 2/21/2	007
Lab Order:	0702230		Collection Da	te: 2/20/2	007 9:00:00 AM
CLIENT:	San Juan Refining		Client Sample I	D: GAC	2 Eff

Hall Environmental Analysis Laboratory, Inc.

EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	2/23/2007 1:00:06 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	2/23/2007 1:00:06 PM
Surr: DNOP	121	58-140	%REC	1	2/23/2007 1:00:06 PM
EPA METHOD 8015B: GASOLINE RANGE				· .	Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	. 1	2/21/2007 12:30:02 PM
Surr: BFB	107	79.2-121	%REC	1	2/21/2007 12:30:02 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	1.0	µg/L	1	2/21/2007 12:30:02 PM
Toluene	ND	1.0	µg/L	1	2/21/2007 12:30:02 PM
Ethylbenzene	ND	1.0	µg/L	1	2/21/2007 12:30:02 PM
Xylenes, Total	ND	3.0	µg/L	1	2/21/2007 12:30:02 PM
Surr: 4-Bromofluorobenzene	88.4	70.2-105	%REC	1	2/21/2007 12:30:02 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

Date: 26-Feb-07

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 2 of 2

2/4



# Hall Environmental Analysis Laboratory, Inc.

CLIENT:San Juan RefiningLab Order:0702230Project:GAC Analysis 2-20-07Lab ID:0702230-01

Date: 26-Feb-07

Client Sample ID: GAC 1 Eff Collection Date: 2/20/2007 8:55:00 AM Date Received: 2/21/2007 Matrix: AQUEOUS

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE					Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	2/23/2007 12:25:39 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	2/23/2007 12:25:39 PM
Surr: DNOP	118	58-140	%REC	1	2/23/2007 12:25:39 PM
EPA METHOD 8015B: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	2/21/2007 11:59:49 AM
Surr: BFB	104	79.2-121	%REC	1	2/21/2007 11:59:49 AM
EPA METHOD 8021B: VOLATILES					Analyst: <b>NSB</b>
Benzene	2.0	1:0	µg/L	1	2/21/2007 11:59:49 AM
Toluene	ND	1.0	µg/L	1	2/21/2007 11:59:49 AM
Ethylbenzene	ND	1.0	µg/L	1	2/21/2007 11:59:49 AM
Xylenes, Total	ND	3.0	µg/L	1	2/21/2007 11:59:49 AM
Surr: 4-Bromofluorobenzene	88.2	70.2-105	%REC	1	2/21/2007 11:59:49 AM

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 2

1/4



## COVER LETTER

Monday, February 26, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC Analysis 2-20-07

Dear Cindy Hurtado:

Order No.: 0702230

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 2/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE ■Suite D ■Albuquerque, NM 87109 505.345.3975 ■Fax 505.345.4107 www.hallenvironmental.com

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albinationa Navion 87109	Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com		۲ ۵ ۵ ۵ ۹ ۹ ۹ ۹ ۹ ۹ ۹ ۹ ۹ ۹ ۹ ۹ ۹ ۹ ۹ ۹	(f. 818.1) d 418.1) d 504.1) d 8021) als v(O <sub>3</sub> , NO <sub>2</sub> , P sides / PCB's sides / PCB's als v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) c v(AON) C (AON) C AON) c (AON) C (AON) C (AON) C (AON) C (AON) C (AON) C (AON) C (AON) C (AON) C (AON)	TPH (Method EDB (Method B310 (PUA RCRA 8 Met RCRA 8 Met 8081 Pestid 82508 (VO) 82508 (VO) 82508 (VO) 82503 (Semi					
0ther:	Project Name: 6AC 2/08/07	Project #:	Project Manager: (8021)	Sampler Condicy True Reactor Sampler Condict True Reactor Sample Temperature:	Preservative     HEAL No.       Number/Volume     Preservative       HgCl <sub>2</sub> HNO.       0707     0707	4-102 Her -1 X X				Repeived By: (Signature) Z/G /6 7 Remarks: Received By (Signature)
CHAIN-OF-CUSTODY RECORD	Client: SAN Juan Reforms	Address # 50 Rol 4990	BIOTITICA , NM B7413	Phone #: 505-632-4161 Fax #: 505-1221-2911	Date Time Matrix Sample I.D. No.	2-8-07 18:36 H2 ONC 1EFF				Date: Time: Relinquished By: (Signatury)

# Hall Environmental Analysis Laboratory, Inc.

	Sample	Rece	eipt Ch	ecklist				•
Client Name SJR				Date and Time Received:			2/9/2007	
Work Order Number 0702097	_			Received by	TLS			
Checklist completed by Signature	lippe		2 Date	-9-07				
Matrix	Carrier name	UPS						
Shipping container/cooler in good condition?		Yes		No 🗌	Not Present			
Custody seals intact on shipping container/cooler	?	Yes		No	Not Present		Not Shipped	
Custody seals intact on sample bottles?		Yes		No 🗌	N/A		·	
Chain of custody present?		Yes		No 🗌				
Chain of custody signed when relinquished and re	eceived?	Yes		No 🗌				•
Chain of custody agrees with sample labels?		Yes		No 🗌				
Samples in proper container/bottle?		Yes		No 🗌				
Sample containers intact?		Yes		No 🗔				a.
Sufficient sample volume for indicated test?		Yes		No 🗌				,
All samples received within holding time?		Yes		No 🗌				
Water - VOA vials have zero headspace?	No VOA vials sub	mitted		Yes 🔽	No 🗌	ļ		
Water - Preservation labels on bottle and cap ma	tch?	Yes		No 🗆	N/A 🔽	]		
Water - pH acceptable upon receipt?		Yes		No 🗔	N/A 🗹			
Container/Temp Blank temperature?			5°	4° C ± 2 Accepta	able			
COMMENTS:				If given sufficient	t time to cool.			
Client contacted	Date contacted:			Pers	son contacted			-
Contacted by:	Regarding	,-						
Comments:								-
Corrective Action	· · · · · · · · · · · · · · · · · · ·						· · · · · · · · · · · · · · · · ·	
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# QA/QC SUMMARY REPORT

San Juan Refining

Project: GAC 2-08-0	7					Work	<b>Order:</b> 0702097
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RF	DLimit Qual
Method: SW8015							۳
Sample ID: MB-12299		MBLK			Batch ID: 1229	99 Analysis Date:	2/12/2007 4:08:22 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0				
Motor Oil Range Organics (MRO)	ND	mg/L	5.0				
Sample ID: LCS-12299		LCS			Batch ID: 122	99 Analysis Date:	2/12/2007 4:42:25 PM
Diesel Range Organics (DRO)	5.505	' mg/L	1.0	110	74 157		
Sample ID: LCSD-12299		LCSD			Batch ID: 122	99 Analysis Date:	2/12/2007 5:16:29 PM
Diesel Range Organics (DRO)	5.045	mg/L	1.0	101	74 157	8.71	23
Method: SW8015							
Sample ID: 5ML RB		MBLK			Batch ID: R224	31 Analysis Date:	2/9/2007 10:01:19 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050				
Sample ID: 5ML RB		MBLK	•		Batch ID: R224	40 Analysis Date:	2/12/2007 8:59:23 AM
Gasoline Range Organics (GRO)	ND	ma/L	0.050	*	-		
Sample ID: 2.5UG GRO LCS		LCS			Batch ID: R224	31 Analysis Date:	2/9/2007 12:01:44 PM
Gasoline Bange Organics (GRO)	0 5348	ma/l	0.050	102	80 115		
Sample ID: 2.5UG GRO LCS	0.0010	LCS	0.000	102	Batch ID: R224	40 Analysis Date:	2/12/2007 11:19:44 AM
Gasoline Range Organics (GRO)	0.5266	mg/L	0.050	101	80 115	·····,····	
Mothod: SW/8021		<u>_</u>					
Sample ID: 5ML RB		MBLK			Batch ID: R224	31 Analysis Date:	2/9/2007 10:01:19 AM
Benzene	ND	uo/l	10			<b>_</b>	
Toluene	ND	ua/L	1.0				·
Ethylbenzene	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Sample ID: 5ML RB	a.	MBLK			Batch ID: R224	40 Analysis Date:	2/12/2007 8:59:23 AM
Benzene	ND	µg/L	1.0				
Toluene	ND	µg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Sample ID: 100NG BTEX LCS		LCS			Batch ID: R224	31 Analysis Date:	2/9/2007 11:31:36 AM
Benzene	18.22	µg/L	1.0	91.1	85.9 113		
Toluene	19.06	µg/L	1.0	95.3	86.4 113		
Ethylbenzene	19.12	µg/∟	1.0	95.6	83.5 118		
Xylenes, Total	57.11	µg/L	2.0	95.2	83.4 122		
Sample ID: 100NG BTEX LCS		LCS			Batch ID: R224	40 Analysis Date:	2/12/2007 10:49:36 AN
Benzene	19.95	µg/L	1.0	99.8	85.9 113		
Toluene	20.13	µg/L	1.0	101	86.4 113		
Ethylbenzene	19.94	µg/L	1.0	99.7	83.5 118		
Xylenes, Total	59.87	µg/L	2.0	99.8	83.4 122		

Qua	lifiers:			······································
Е	Value above quantitation range	Н	Holding times for preparation or analysis exceeded	
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits	Page I
			2/3	

CLIENT:	San Juan Refining			Client Sample II	: GAC	1 Eff
Lab Order:	0702097			<b>Collection Dat</b>	e: 2/8/20	007 8:30:00 AM
Project:	GAC 2-08-07			Date Receive	<b>1:</b> 2/9/20	)07
Lab ID:	0702097-01			Matri	K: AQU	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	2/12/2007 5:50:32 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	2/12/2007 5:50:32 PM
Surr: DNOP		115	58-140	%REC	1	2/12/2007 5:50:32 PM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: LMM
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1 .	2/9/2007 9:03:33 PM
Surr: BFB		107	79.2-121	%REC	1	2/9/2007 9:03:33 PM
EPA METHOD	8021B: VOLATILES					Analyst: LMM
Methyl tert-buty	yl ether (MTBE)	ND	2.5	µg/L	1	2/9/2007 9:03:33 PM
Benzene		2.9	1.0	µg/L	1	2/9/2007 9:03:33 PM
Toluene		ND	1.0	µg/L	1՝	2/9/2007 9:03:33 PM
Ethylbenzene		ND	1.0	µg/L	1	2/9/2007 9:03:33 PM
Xylenes, Total		ND	. 3.0	µg/L	1	2/9/2007 9:03:33 PM
Surr: 4-Brom	ofluorobenzene	88.9	70.2-105	%REC	1	2/9/2007 9:03:33 PM

# Hall Environmental Analysis Laboratory, Inc.

Date: 13-Feb-07

Qualifiers: \* Value exceeds Maximum Contaminant Level в Analyte detected in the associated Method Blank Е Value above quantitation range Н Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits MCL Maximum Contaminant Level ND Not Detected at the Reporting Limit RL Reporting Limit Page 1 of 1 S Spike recovery outside accepted recovery limits 1/3



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## COVER LETTER

Tuesday, February 13, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 2-08-07

Dear Cindy Hurtado:

Order No.: 0702097

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 2/9/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com
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		ALL ENVIRONMENTAL ANALYSIS LABORATORY 1901 Hawkins NE, Suite D	vouquerque, New Mexico o7 109 el, 505.345.3975 Fax 505.345.4107 /ww.hallenvironmental.com				1085)	8) s,£ 70d ''	7) ? \ bCE <sup>3</sup> ' NO <sup>S</sup> ∀H)	A or P. etals icides (AO (AO) (AO)	(VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA) (VPA)	APDR APDR 808 8260 8250 8250 8250 8250 8250									*;*
	-						)iesel)	]/seද seე) 3) දෙ	)31) 128( 81) 128( 100 100 100 100 100 100 100 100 100 10	181 - 192 - 193 -	H M + Meth Meth Meth Meth Meth	EDC EDB LbH BLEX BLEX	×						· · · · · · · · · · · · · · · · · · ·	Remarks:	N.
	QA / QC Package:	Std 🔲 Level 4 🔲 Other:	Project Name:	(JAC 1-10-07	Project #:		Project Manager:		Sampler! Undu Hunta 60	Sample Tempereture: 50	Preservative		4 VOA Hel 1							Received By: (Signature) 1/11/12	Redeived By: (Signature)
		Chain-of-Custody record	Client: SAN JUAN REFINING		Address: # 50 Rd 4990	TS/Dome eld NM	$\varepsilon 1 h L B$		Phone #: 555 - 632 - 4161	Fax #: 505-637-39/1		Date Time Matrix Sample I.D. No.	1-10 47 9:30 H,D GAC 1 EFF							Date: Time: Relindushed/By: (Signature) /	Date: Time: Relinquished By (Signature)

	Sample	Receipt Che	ecklist			
Client Name SJR			Date and Time	Received:	1/11/2007	
Work Order Number 0701139	,		Received by	TLS		-
	m	Dane	11,07			
Matrix	Carrier name	<u>UPS</u>				
Shipping container/cooler in good condition?		Yes 🗹	No	Not Present		
Custody seals intact on shipping container/cooler?		Yes 🗹	No 🗌	Not Present	Not Shipped	
Custody seals intact on sample bottles?		Yes	No 🗌	N/A		• •
Chain of custody present?		Yes 🗹	No 🗔			
Chain of custody signed when relinquished and rece	eived?	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 🗌			
Water - VOA vials have zero headspace?	No VOA vials subr	nitted	Yes 🗹	No 🗌		
Water - pH acceptable upon receipt?		Yes	No 🗌	N/A 🗹		
Container/Temp Blank temperature?		5°	4° C ± 2 Accepta If given sufficien	able t time to cool.		۲.
COMMENTS:						
	<i>,</i>					
	·					<u>_</u>
			· · · · · · · · · · · · · · · · · · ·			
Client contacted Da	ate contacted:		Pers	son contacted	···	
Contacted by: Re	egarding					
Comments:						
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Corrective Action			· · ·			
		3/2	· · .			
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# **QA/QC SUMMARY REPORT**

Client: San Jua Project: GAC A	an Refining analysis 1/10/07		e.,				Wor	k Order: 0701139
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RI	PDLimit Qual
Method: SW8015								
Sample ID: MB-12103		MBLK			Batch	D: <b>12103</b>	Analysis Date:	1/11/2007 10:15:38 PM
Diesel Range Organics (DRC	) ND	mg/L	1.0					
Motor Oil Range Organics (N	RO) ND	mg/L	5.0					•
Sample ID: LCS-12103		LCS			Batch	ID: <b>12103</b>	Analysis Date:	1/11/2007 10:49:27 PM
Diesel Range Organics (DRC	) 5.396	mg/L	1.0	108	74	157		
Sample ID: LCSD-12103		LCSD			Batch	ID: 12103	Analysis Date:	1/11/2007 11:57:08 PM
Diesel Range Organics (DRC	) 5.637	mg/L	1.0	113	74	157	4.37	23
Method: SW8015								· ·
Sample ID: 0701139-01A M	ISD	MSD			Batch	ID: <b>R22096</b>	Analysis Date:	1/13/2007 3:16:24 AM
Gasoline Range Organics (G	RO) 0.5182	mg/L	0.050	104	80	115	1.99	8.39
Sample ID: 5ML RB	,	MBLK			Batch	ID: R22096	Analysis Date:	1/12/2007 12:13:27 PM
Gasoline Range Organics (G	RO) ND	ma/l	0.050					
Sample ID: 2.5UG GRO LO	cs	LCS	0.000		Batch	ID: R22096	Analysis Date:	1/12/2007 2:14·10 PM
Cacalina Banga Organias (G	PO) 0.5570	mall	0.050	111	90	115	, and yelle Bates	
Sample ID: 0701139-014 B	AC) 0.0070	MS	0.030	111	ou Batch	115 1D- P22006	Analysis Data:	1/12/2007 2·46·14 AM
Casolina Bande Ordanice (G	BO) 0.5286	mo/l	0.050	106	80	115	Analysis Date.	1/13/2007 2.40.14 AW
	into) 0.5200		0.000	100	00			
Method: SW8021	490	MSD			Patch	1D. D32006	Applyric Date:	1/12/2007 2·16·24 AM
	E 740	10130	1.0	05.0	Datur	110. K22090	Analysis Date.	1/13/2007 3.10.24 AW
Selizene	35.37	µg/c ug/l	1.0	95.2	00.9 96 4	112	2.00	27
Fibulbanzana	9 294	µg/L	1.0	90.0	00.4	110	3.40	19
Zulopos Total	0.304 /1 07	µg/L	3.0	93.Z 105	03.0 92.4	110	2.02	10
Sample ID: 5ML PR	41.57	µy,∟ MRIK	5.0	105	00.4 Batch	ID . <b>P22006</b>	Analysis Date:	1/10/2007 12-13-27 PM
		WIDEN	4.0		Daton	10. 122030	Analysis Date.	1/12/2007 12:13:27 1 10
Benzene	ND	µg/∟	1.0				a.	
	ND	µg/∟	1.0					
Etnyidenzene		µg/L	1.0					
Sample ID: 100NG BTEX		⊢µg/∟ ICS	3.0		Batch	ID R22096	Analysis Date	1/12/2007 1·44·01 PM
Banzona	10.15		1.0	00.9	95.0	112	, and yold Date	
Teluene	18.13	µg/L	1.0	90.0	86.4	113		
Toluelle	18.04	µg/L	1.0	93.0	00.4 83.5	110		
	18.94 56.60	ug/L	3.0	04.7 Q/ 3	83.4	122		
Sample ID: 0701139-01A	MS	µg,∟ MS		34.5	Batch	ID: R22096	Analysis Date	: 1/13/2007 2:46:14 AN
Bonzono	5 874	ua/l	10	97.9	85.9	113		
Toluene	36.62	µ9/⊏ uo/l	1.0	97.9 QQ N	86 A	112		
Ethylbanzene	90.02 8.624	HA\F HA\F	1.0	05.0 05.9	82 5	118		
Xvlenes Total	43 42	ua/L	3.0	109	83.4	122		
Ayronoo, rotar	10.12	P.3' -	0.0	100		* #~~ <b>6</b> ~	;	
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Qualifiers:

E

J

- Value above quantitation range
- Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
  - Spike recovery outside accepted recovery limits
    - 2/3

S

CLIENT:	San Juan Refining			Client Sample ID:	GAC	1 Eff
Lab Order:	0701139			<b>Collection Date:</b>	: 1/10/2	2007 9:30:00 AM
Project:	GAC Analysis 1/10/07			Date Received:	: 1/11/2	2007
Lab ID:	0701139-01			Matrix	: AQUI	EOUS
Analyses		Result	PQL Q	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE			· · · · · · · · · · · · · · · · · · ·		Analyst: SCC
Diesel Range C	Drganics (DRO)	ND	1.0	mg/L	1	1/12/2007 1:38:36 AM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	1/12/2007 1:38:36 AM
Surr: DNOP		129	58-140	%REC	1	1/12/2007 1:38:36 AM
EPA METHOD	8015B: GASOLINE RANG	E				Analyst: LMM
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	1/13/2007 2:16:05 AM
Surr: BFB		103	79.2-121	%REC	1	1/13/2007 2:16:05 AM
EPA METHOD	8021B: VOLATILES					Analyst: LMM
Benzene		ND	1.0	μg/L ·	1	1/13/2007 2:16:05 AM
Toluene		ND	1.0	µg/L	1	1/13/2007 2:16:05 AM
Ethylbenzene		ND	1.0	µg/L	1	1/13/2007 2:16:05 AM
Xylenes, Total		ND	3.0	µg/L	1	1/13/2007 2:16:05 AM
Surr: 4-Brom	ofluorobenzene	86.2	70.2-105	%REC	1	1/13/2007 2:16:05 AM

Date: 15-Jan-07

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 1



#### COVER LETTER

Monday, January 15, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC Analysis 1/10/07

Dear Cindy Hurtado:

Order No.: 0701139

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 1/11/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy/reeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107 www.hallenvironmental.com

 $A_{4}$ 



	Sample	Rece	eipt Che	ecklist				NR3
Client Name SJR				Date and Time	Received:		1/4/2007	
Work Order Number 0701033				Received by	TLS			
		(	Jan Date	4,07				
Matrix	Carrier name	<u>UPS</u>						
Shipping container/cooler in good condition?		Yes		No 🗌	Not Present			
Custody seals intact on shipping container/cool	er?	Yes	$\checkmark$	No 🗌	Not Present	Not Shipp	ed 🗌	
Custody seals intact on sample bottles?		Yes		No 🗌	N/A	$\checkmark$		
Chain of custody present?		Yes		No 🗌				
Chain of custody signed when relinquished and	received?	Yes	$\checkmark$	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 🗌				
Water - VOA vials have zero headspace?	No VOA vials sub	mitted		Yes 🗹	No 🗌			
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🔽			
Container/Temp Blank temperature?			5°	4° C ± 2 Accepta	able t time to cool			
COMMENTS:				in given odmolori				
Client contacted	Date contacted:			Pers	son contacted			
Contacted by:	Regarding							-
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Comments:								-
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Corrective Action				······				
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D . C . . . .

# QA/QC SUMMARY REPORT

Client: San Juan Ret	fining					•		
Project. OAC 1-5-07							Work	<b>Order:</b> 0701033
Analyte	Result	Units	PQL	%Rec	LowLimit HighLir	mit %	%RPD RF	DLimit Qual
Method: SW8015		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		·			-	
Sample ID: MB-12086		MBLK			Batch ID: 12	2086 A	nalysis Date:	1/9/2007 9:26:30 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0					
Sample ID: LCS-12086		LCS			Batch ID: 12	2086 A	Analysis Date:	1/9/2007 10:00:35 AM
Diesel Range Organics (DRO)	5.093	mg/L	1.0	102	74 157			
Sample ID: LCSD-12086		LCSD			Batch ID: 12	2086 A	Analysis Date:	1/9/2007 10:23:49 AM
Diesel Range Organics (DRO)	4.417	mg/L	1.0	88.3	74 157		14.2	23
Method: SW8015								
Sample ID: 0701033-01A MSD		MSD			Batch ID: R2	2023 A	Analysis Date:	1/5/2007 2:23:09 PM
Gasoline Range Organics (GRO)	0.5960	mg/L	0.050	101	80 115		2.03 8	.39
Sample ID: 5ML RB		MBLK			Batch ID: R2	2023 /	Analysis Date:	1/5/2007 9:36:07 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID: R2	2023 /	Analysis Date:	1/5/2007 11:36:27 AM
Gasoline Range Organics (GRO)	0.4960	mg/L	0.050	99.2	80 115			
Sample ID: 0701033-01A MS		MS			Batch ID: R2	22023	Analysis Date:	1/5/2007 1:53:05 PM
Gasoline Range Organics (GRO)	0.5840	mg/L	0.050	98.1	80 115			
Method: SW8021								
Sample ID: 5ML RB		MBLK			Batch ID: R2	22023	Analysis Date:	1/5/2007 9:36:07 AN
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	3.0					
Sample ID: 100NG BTEX LCS		LCS			Batch ID: R2	22023	Analysis Date:	1/5/2007 11:06:27 AM
Benzene	17.80	μg/L	1.0	89.0	85.9 113			
Toluene	17.87	µg/L	1.0	89.3	86.4 113			
Ethylbenzene	17.69	µg/L	1.0	88.4	83.5 118			
Xylenes, Total	53.20	µg/L	3.0	88.7	83.4 122		1	
×							1	

- Qualifiers:
  - E Value above quantitation range
  - J Analyte detected below quantitation limits
  - R RPD outside accepted recovery limits

- Н Holding times for preparation or analysis exceeded
  - Not Detected at the Reporting Limit
  - Spike recovery outside accepted recovery limits
    - 2/3

ND

S

CLIENT:	San Juan Refining			Cli	ient Sample ID:	GAC	1 Eff
Lab Order:	0701033			Ċ	Collection Date:	1/3/20	007 12:30:00 PM
Project:	GAC 1-3-07				Date Received:	1/4/20	)07
Lab ID:	0701033-01				Matrix:	АQUI	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC
Diesel Range (	Drganics (DRO)	6.2	1.0		mg/L	1	1/9/2007 12:17:01 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L	1	1/9/2007 12:17:01 PM
Surr: DNOP		91.4	58-140		%REC	1	1/9/2007 12:17:01 PM
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: LMM
Gasoline Rang	e Organics (GRO)	0.093	0.050		mg/L	1	1/5/2007 1:23:03 PM
Surr: BFB		101	79.2-121		%REC	1	1/5/2007 1:23:03 PM
EPA METHOD	8021B: VOLATILES						Analyst: LMM
Benzene		ND	1.0		µg/L	1	1/5/2007 1:23:03 PM
Toluene		ND	1.0		µg/L	1	1/5/2007 1:23:03 PM
Ethylbenzene		ND	1.0		µg/L	1	1/5/2007 1:23:03 PM
Xylenes, Total	,	ND	3.0		µg/L	1	1/5/2007 1:23:03 PM
Surr: 4-Brom	nofluorobenzene	81.5	70.2-105		%REC	1	1/5/2007 1:23:03 PM

Date: 10-Jan-07

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

1/3

Page 1 of 1



### COVER LETTER

Wednesday, January 10, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 1-3-07

Dear Cindy Hurtado:

Order No.: 0701033

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 1/4/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE ■Suite D ■Albuquerque, NM 87109 505.345.3975 ■Fax 505.345.4107 www.hallenvironmental.com

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×*		or Headspace (Y or N)	Air Bul					
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	EN1 B71( 505.505.	(AOV-im92)	8570					
	BOR Buite Fax tal. cc	(AOV) E	82605					
	IRO NE, S NE, S BV B75 B75 Inemr	Pesticides / PCB's (8082)	11808		 · ·		-	
	NKins Vkins Vkins 45.3 Nviroi	(E' CI' NO <sup>3</sup> ' NO <sup>5</sup> ' EO <sup>4</sup> ' 2O <sup>4</sup> )	anoinA		 			·
	ALY ALY 1 Haw 105.3 05.3 .halle	B Metals	3 ARDR		 			
	HAL AND Albuc Www.	(HA9 no AN9)	83101				·	۰ ۲. <sup>۰</sup>
		(1.400 0001)91V						
		Vethod 60.41)						 
		ethod 8015B(Ga3Diceal)	M H9T >	$\overline{\mathbf{X}}$		-		
		+ MTBE + TPH (Gasoline Only)	- XJT8	,				Irks:
		+ MIBE (8051)	- X318 🖇	<				Bema
	0A/0C Package: Std □ Lavel 4 □ Other: Project Name: River Tellate / Ome 2077 - VAPOY	Project Manager: Project Manager: Cirolog Hurdic Dal Kirkow Sample Temperature: Preservative	Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> OTOC3/T	1-fedar 1				Repeived By: (Signature) (2/21/87 Druce 1355 Received By: (Signature)
	CUSTODY RECORD	ed 4440 edd NN 87413 e32-461 32-3911	Matrix Sample I.D. No.	VAPOR DW # 1				Relinduibhed By: (Signature) Relinquished By: (Signature) Relinquished By: (Signature)
		50 K	June <b>1</b>	BAM				Time:
		Auore#	Date	6/20/07				Conte: Date: Date:

	Sample	Rece	eipt Che	ecklist				
Client Name SJR				Date and Time	Received:		6/21/20	07
Work Order Number 0706317	l	١		Received by	TLS			
Checklist completed by Signature	n	1)(	).7 Date					
Matrix	Carrier name	<u>UPS</u>						
Shipping container/cooler in good condition?		Yes		No 🗌	Not Present			
Custody seals intact on shipping container/cooler	?	Yes	$\checkmark$	No 🗌	Not Present	Not	Shipped	
Custody seals intact on sample bottles?		Yes		No	N/A	$\checkmark$		
Chain of custody present?		Yes	$\checkmark$	No 🗌				
Chain of custody signed when relinquished and re	eceived?	Yes		No				
Chain of custody agrees with sample labels?		Yes						
Samples in proper container/bottle?		Yes	$\checkmark$	No 🗌				
Sample containers intact?		Yes		No 🗌				
Sufficient sample volume for indicated test?		Yes		No 🗌				
All samples received within holding time?		Yes	$\checkmark$	No 🗌				
Water - VOA vials have zero headspace?	No VOA vials subr	nitted		Yes	No 🗌			
Water - Preservation labels on bottle and cap ma	tch?	Yes		No 🗌	N/A 🗹			
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A 🗹			
Container/Temp Blank temperature?				4° C ± 2 Accepta	able			
COMMENTS:				If given sufficien	t time to cool.			
	· · · · · · · · · · · · · · · · · · ·			·····		 		
Client contacted	Date contacted:			Pers	son contacted			
Contacted by:	Regarding				,			
Comments:						·		
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Corrective Action					•••••••••••••••••••••••••••••••••••••••			
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# QA/QC SUMMARY REPORT

Client: San Juan Ref	ining							
Project: River Terrace	e 2nd Qtr 2	2007-Vapor					Work	<b>Order:</b> 0706317
Analyte	Result	Units	PQL -	%Rec	LowLimit H	lighLimit	%RPD RP	DLimit Qual
Method: SW8015								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R24112	Analysis Date:	6/25/2007 8:38:52 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R24112	Analysis Date:	6/25/2007 10:20:52 AM
Gasoline Range Organics (GRO)	0.5100	mg/L	0.050	97.6	80	115		
Method: SW8260B								
Sample ID: 5mL rb		MBLK			Batch ID:	R24116	Analysis Date:	6/25/2007 10:21:11 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Totai	ND	μg/L	3.0					
Sample ID: 100ng Ics		LCS			Batch ID	R24116	Analysis Date:	6/25/2007 11:38:52 AM
Benzene	20.86	µg/L	1.0	104	82.4	128		
Toluene	19.80	µg/L	1.0	99.0	77.2	115	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	
Method: SW8260B								
Sample ID: 5mL rb		MBLK			Batch ID	R24116	Analysis Date:	6/25/2007 10:21:11 AM
Benzene	ND	µg/L	1.0		1			
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	.µg/L	1.5					
Sample ID: 100ng Ics		LCS			Batch ID	R24116	Analysis Date:	6/25/2007 11:38:52 AM
Benzene	20.86	μg/L	1.0	104	82.4	128		· · · ·
Toluene	19.80	µg/L	1.0	99.0	77.2	115		
Method: SW8015							, ,	
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID	R24178	Analysis Date:	6/28/2007 9:29:44 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050				. ,	
Sample ID: 2.5UG GRO LCS		LCS			Batch ID	: <b>R24178</b>	Analysis Date:	6/28/2007 5:30:21 PN
Gasoline Range Organics (GRO)	0.4960	mg/L	0.050	99.2	80	115		

 Qualifiers:
 E
 Value above quantitation range
 H
 Holding times for preparation or analysis exceeded

 J
 Analyte detected below quantitation limits
 ND
 Not Detected at the Reporting Limit

 R
 RPD outside accepted recovery limits
 S
 Snike recovery outside accepted recovery limits

Page 1

Hall Envir	onmental Anal	ysis Laborat	tory, In	i <b>c.</b>	Date:	02-Ju	1-07
CLIENT: Lab Order: Project: Lab ID:	San Juan Refining r: 0706317 River Terrace 2nd ( 0706317-01 <b>IOD 8015B: GASOLINE RA</b> Range Organics (GRO) B	Qtr 2007-Vapor		C	Client Sample ID: Collection Date: Date Received: Matrix:	DW # 6/20/2 6/21/2 AJR	11 2007 8:30:00 AM 2007
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: GASOLINE R	ANGE	·				Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	5.0		µg/L	1	6/28/2007 11:22:26 AM
Surr: BFB		99.8	84.5-129		%REC	1	6/28/2007 11:22:26 AM
EPA METHOD	8260B: VOLATILES						Analyst: LMM
Benzene		ND	0.10		µg/L	1	6/25/2007 2:52:58 PM
Toluene		ND	0.10		µg/L	1	6/25/2007 2:52:58 PM
Ethylbenzene		ND	0.10		µg/L	1	6/25/2007 2:52:58 PM
Xylenes, Total		0.32	0.30		µg/L	1	6/25/2007 2:52:58 PM
Surr: 1,2-Dic	hloroethane-d4	92.8	50.9-168		%REC	1	6/25/2007 2:52:58 PM
Surr: 4-Brom	ofluorobenzene	89.2	71.2-123		%REC	1	6/25/2007 2:52:58 PM

64.7-142

81.9-122

%REC

%REC

90.5

88.1

Date: 02-Jul-07

1

1

6/25/2007 2:52:58 PM

6/25/2007 2:52:58 PM

1

Qualifiers:

Surr: Dibromofluoromethane

Surr: Toluene-d8

- Value exceeds Maximum Containinant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit





### COVER LETTER

Monday, July 02, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace 2nd Qtr 2007-Vapor

Dear Cindy Hurtado:

Order No.: 0706317

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 6/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

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	LENVIHUNIVIEN JAL LYSIS LABORATORY Hawkins NE, Suite D	erque, New Mexico of 103 5.345.3975 Fax 505.345.4107 allenvironmental.com			······································	(780°) (280°)	18) s'8	7) ? \ bCE <sup>3 '</sup> NO <sup>5</sup>	etals ticides OA) mi-V0,	M 8 AP7A Anions (F, 8081 Pess V) 80608 (V 82500 (Sei 8270 (Sei								·				
	<b>ANA</b> 4901	Tel. 50						(1.8.1) (1.71) (1.21) (HA)	°4 bon )2 bon )8 bon 9 or P.	8310 (b/) EDC (Wef) EDB (Wef)												
			WPOK -		(ýln	(120) 10 enili 10 enili	8) S,8	H9T -	oq 80, 118E +	TPH Meth BTEX + M BTEX - M	7	4	V	7	5	7	7 7		 			Remarks:
QA / QC Package:	Std 🔲 Level 4 🔲 Other:	Project Name:	Riter Terror , Dredout-V	Project #:		Project Manager:		Sampler whether tacks / 2010 Kra Kow	Sample Temperature:	Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> HHOA	1-Teallar 7	&	6			12	5					Received By: (Signature) 0/20/87 Amy 935 Reveved By: (Signature)
	of-custody record	July Return		0 R1 4990	on Feld Nh	1415		1017-632-4161	5-632-3911	ne Matrix Sample I.D. No.	14 NAPAR TP #13	21# dL / M	11 #-01	A 77 - #/0	A TO-#3	2 + - 4 - 1 - + - + +	1 TP-#9		-		<	Relinquished By: (Spinkture) Relinquished By (Signature)
	chain-0	Client: San		Address:#57	Blee			Phone #: 205	Fax #: 504	Date	1/1092 1030	NTU 1	1/25	944	- Xe	12	110-			-		Constant Time.

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D	Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107 www hallenvironmental com		AWAYAR ELUCIA I I I I I I I I I I I I I I I I I I		(N Joc (N Joc (N Joc)	9 ( <sub>2</sub> 09 ) (08) 2'	edspea ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )	08 bor 08 bor 20 ro 2 20 / 10 20 / 10 20 / 10 20 / 10 20 / 10 20 / 10 20 / 10	119(M) 8( 119(M) 0( M) 0 (P(M) M) 8 AAC M) 8 AAC M) 1 0 (M) M) 1 0 (M) 1 0 (M) M) 1 0 (M) M) 1 0 (M) M) 1 0 (M) M) 1 0 (M) 1 0 (M) M) 1 0 (M) 1 0 (M) M) 1 0 (M)  EE 23 28 28 7A 7A 88 28 28 28 28 28 28 28 28 28 28 28 28												
				(ήι	<b>5</b> 1) 51)	10260) 10260) 10260)	8.1) 58 HPH I	+ 387 108 bo	ын (Weth H (Meth EX + M	18) 11 11	7	7	7	7		7				Remarks:	
QA/ QC Package: Std 🔲 Level 4 🔲 Other:	Project Name:	River Terrace & Bre- LOD7 - VA Por	Project #:		Project Manager:	Cindy Hutzaho	Sampler's reduction rado Bob Kinkow	Sample Temperature:	Number/Volume HEAL No.		1-Teolae		$\gamma$		5	ê				Received By: (Signature) 6/26/37	Received By? (Signature)
ain-of-custody record	SAN Iven Relime		etter Rol 4990	Bloomfield, NM	\$ 413		#575-632-4161	575-632-3911	Time Matrix Sample I.D. No.	<u><u>q</u></u>	of Iblokin Vapor MW#47	11 AM 1 TP- #1	1250n TP-#8	126m 772- #-60	16 TD-#5	340m 72-#2				Time: Relinquished By (Signature)	Time!   Relinquished By: Bignature)
	Client:		Addres				Phone	Fax #:	Date		6/18/E	<u>,</u>								Date:	Date:

Sam	nple Receipt Ch	ecklist		
Client Name SJR		Date and Time	Received:	6/20/2007
Work Order Number 0706279		Received by	TLS	
	U Date 1	120/07		
Matrix Carrier na	ime <u>UPS</u>			
Shipping container/cooler in good condition?	Yes 🔽	No 🗔	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🔽	No 🗔	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes	No 🗌	N/A	
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 🗌	٩	
Sample containers intact?	Yes 🔽	No		
Sufficient sample volume for indicated test?	Yes 🗸	No		
All samples received within holding time?	Yes 🗸	No		
Water - VOA vials have zero headshace? No VOA vials	submitted V	Yes	No	
Water - Preservation labels on bottle and cap match?	Yes 🗌	No 🗔	N/A 🔽	
Water - pH acceptable upon receipt?	Yes	No	N/A	
Container/Temp Blank temperature?		4° C + 2 Accepta	ible	
COMMENTS		If given sufficient	time to cool.	
Client contacted Date contacted	1.	Por	contacted	
	·. · · · · · · · · · ·			
Contacted by: Regarding	· · · · · · · · · · · · · · · · · · ·	· ····································		·
Comments:				
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- Corrective Action	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·
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# QA/QC SUMMARY REPORT

Client: San Juan I	Ketining							-
Project: River Ten	ace-2nd Qtr-2	007-Vapor		<del></del>			Worl	<b>COrder</b> : 0706279
Analyte	Result	Units	PQL	%Rec	LowLimit H	lighLimit	%RPD RF	PDLimit Qual
Method: SW8260B								
Sample ID: 5mL rb		MBLK			Batch ID:	R24116	Analysis Date:	6/25/2007 10:21:11 AM
Benzene	ND	µg/L	1.0					`
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	3.0					
Sample ID: 100ng Ics		LCS			Batch ID:	R24116	Analysis Date:	6/25/2007 11:38:52 AM
Benzene	20.86	µg/L	1.0	104	82.4	128		
Toluene	19.80	µg/L	1.0	99.0	77.2	115		
Method: SW8260B								
Sample ID: 5mL rb		MBLK			Batch ID:	R24116	Analysis Date:	6/25/2007 10:21:11 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	1.5					
Sample ID: 100ng Ics		LCS			Batch ID	: R24116	Analysis Date:	6/25/2007 11:38:52 AM
Benzene	20.86	hð\r	1.0	104	82.4	128		
Toluene	19.80	µg/L	1.0	99.0	77.2	115		· · · · · · · · · · · · · · · · · · ·
Method: SW8015								
Sample ID: 5ML REAGENT B	LA	MBLK			Batch ID	R24152	Analysis Date:	6/27/2007 12:05:06 PM
Gasoline Range Organics (GRO	) ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID	: R24152	Analysis Date:	6/27/2007 11:12:13 PM
Gasoline Range Organics (GRO	) 0.4180	mg/L	0.050	79.2	80	115		S
Method: SW8015								
Sample ID: 5ML REAGENT B	LA	MBLK			Batch ID	R24178	Analysis Date:	6/28/2007 9:29:44 AM
Gasoline Range Organics (GRO	) ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID	R24178	Analysis Date:	6/28/2007 5:30:21 PM
Gasoline Range Organics (GRO	) 0.4960	mg/L	0.050	99.2	80	115		

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
  - Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

15/16

ND

Page 2

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# QA/QC SUMMARY REPORT

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San Juan Refining 2007 V т 2 10

Project: River Terrace	QtF-2	.007-vapor		···-			Work	Order: 0706279
Analyte	Result	Units	PQL	%Rec	LowLimit H	ighLimit	%RPD RPI	DLimit Qual
Method: SW8015								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R24087	Analysis Date:	6/24/2007 6:46:06 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	ND	mg/L LCS	0.050		Batch ID:	R24087	Analysis Date:	6/25/2007 1:56:59 AM
Gasoline Range Organics (GRO)	0.4960	mg/L	0.050	94.8	80	115		
Method: SW8260B Sample ID: 5ml rb		MBLK			Batch ID:	R24110	Analysis Date:	6/25/2007 7:09:46 AM
Benzene	ND	ma/Ka	0.050					
Toluene	ND	mg/Kg	0.050					· .
Ftbylbenzene	ND	mg/Kg	0.050					
Xvlenes, Total	ND	mg/Kg	0.10					
Sample ID: 100ng Ics		LCS			Batch ID	R24110	Analysis Date:	6/25/2007 8:20:35 AM
Benzene	1.031	mg/Kg	0.050	103	78.2	123		
Toluene	0.9916	mg/Kg	0.050	99.2	72.6	128		
Method: SW8260B								
Sample ID: 5ml rb		MBLK			Batch ID	R24110	Analysis Date:	6/25/2007 7:09:46 AM
Benzene	ND	μg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	1.5				-	
ample ID: 100ng Ics		LĊS			Batch ID	R24110	Analysis Date:	6/25/2007 8:20:35 AM
Benzene	20.62	µg/L	1.0	103	82.4	128		
Toluene	19.83	µg/L	1.0	99.2	77.2	115		
Method: SW8260B								
Sample ID: b1		MBLK			Batch ID	R24111	Analysis Date:	6/25/2007 8:59:20 AM
Benzene	ND	µg/L	1.0					,
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0				1	
Xylenes, Total	ND	µg/L	1.5					
Sample ID: 100ng Ics		LCS			Batch IC	): <b>R24111</b>	<ul> <li>Analysis Date:</li> </ul>	6/25/2007 10:09:00 AM
Benzene	19.81	hð\r	1.0	99.0	82.4	128		
Toluene	20.75	μg/L	1.0	104	77.2	115		
Method: SW8015 Sample ID: 5ML REAGENT BLA		MBLK			Batch IE	): <b>R24112</b>	Analysis Date:	6/25/2007 8:38:52 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050		Ratch IF	)· R24112	Analysis Date	6/25/2007 10·20·52 AM
Gasoline Range Organics (GRO)	0.5,100	mg/L	0.050	97.6	80	115	indigolo Dato.	0,20,2001 10.20.027 W

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	Quali	fiers:		······································	· · · ·	
y	Е	Value above quantitation range	Н	Holding times for prepa	ration or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Rep	porting Limit	Duna I
	R RPD outside accepted recovery limits			Spike recovery outside	rager	

CLIENT:			Cl	ient Sample ID <sup>.</sup>	: TP- #9				
Lab Order:	0706279			Collection Date: 6/19/2007 1:10:00 PM					
Project:	River Terrace-2nd Qtr-2	007-Vapor			Date Received:	6/20/2007			
Lab ID:	0706279-13				Matrix:	AIR	JR		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	8015B: GASOLINE RANGE						Analyst: NSB		
Gasoline Rang	e Organics (GRO)	6.6	. 5.0		µg/L	1	6/28/2007 10:52:02 AM		
Surr: BFB		95.8	84.5-129		%REC	1	6/28/2007 10:52:02 AM		
EPA METHOD	8260B: VOLATILES						Analyst: LMM		
Benzene		ND	0.10		µg/L	1	6/25/2007 2:14:12 PM		
Toluene		ND	0.10		hð\r	1	6/25/2007 2:14:12 PM		
Ethylbenzene		ND	0.10		μg/L	1	6/25/2007 2:14:12 PM		
Xylenes, Total		0.93	0.30		μg/L	1	6/25/2007 2:14:12 PM		
Surr: 1,2-Dic	hloroethane-d4	93.0	50.9-168		%REC	1	6/25/2007 2:14:12 PM		
Surr: 4-Brom	ofluorobenzene	91.3	71.2-123		%REC	1	6/25/2007 2:14:12 PM		
Surr: Dibrom	ofluoromethane	88.7	64.7-142		%REC	1	6/25/2007 2:14:12 PM		
Surr: Toluen	e-d8	85.4	81 9-122		%REC	1	6/25/2007 2·14·12 PM		

Date: 02-Jul-07

H Holding times for preparation or analysis exceeded
 MCL Maximum Contaminant Level

Analyte detected in the associated Method Blank

RL Reporting Limit

В

Page 13 of 13



E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Value exceeds Maximum Contaminant Level

	· · · · · · · · · · · · · · · · · · ·		· · · · ·		· · · · ·			
CLIENT:	San Juan Refining			Client Sample II	): TP-#	7		
Lab Order:	0706279			Collection Dat	e: 6/19/2	2007 12:50:00 PM		
Project:	River Terrace-2nd Qtr-2	2007-Vapor		Date Receive	<b>i:</b> 6/20/2	6/20/2007 AIR		
Lab ID:	0706279-12			Matri	K: AIR			
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8015B: GASOLINE RANG	E				Analyst: NSB		
Gasoline Rang	e Organics (GRO)	7.0	5.0	µg/L	1	6/27/2007 3:05:48 PM		
Surr: BFB		104	. 84.5-129	%REC	1	6/27/2007 3:05:48 PM		
EPA METHOD	8260B: VOLATILES					Analyst: LMM		
Benzene		ND	0.10	µg/L	· 1	6/25/2007 1:35:19 PM		
Toluene		ND	0.10	µg/L	1	6/25/2007 1:35:19 PM		
Ethylbenzene		ND	0.10	µg/L	1	6/25/2007 1:35:19 PM		
Xylenes, Total		1.0	0.30	µg/L	1	6/25/2007 1:35:19 PM		
Surr: 1,2-Did	chloroethane-d4	92.5	50.9-168	%REC	1	6/25/2007 1:35:19 PM		
Surr: 4-Bron	nofluorobenzene	88.5	71.2-123	%REC	1	6/25/2007 1:35:19 PM		
Surr: Dibron	nofluoromethane	89.6	64.7-142	%REC	1	6/25/2007 1:35:19 PM		
Surr: Toluer	ne-d8	85.8	81.9-122	%REC	1	6/25/2007 1:35:19 PM		

Date: 02-Jul-07

- \* Value exceeds Maximum Contaminant Level Е
- Value above quantitation range J
- Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit S
  - Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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CLIENT:San Juan RefiningLab Order:0706279Project:River Terrace-2nd Qtr-2007-VaporLab ID:0706279-11

Date: 02-Jul-07

Client Sample ID: TP- #3 Collection Date: 6/19/2007 9:55:00 AM Date Received: 6/20/2007 Matrix: AIR

		· · ·			
Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAI	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	7.6	5.0	µg/L	1	6/25/2007 2:25:24 PM
Surr: BFB	117	84.5-129	%REC	1	6/25/2007 2:25:24 PM
EPA METHOD 8260B: VOLATILES					Analyst: LMM
Benzene	ND	0.10	µg/L	1	6/25/2007 12:56:35 PM
Toluene	ND	0.10	µg/L	1	6/25/2007 12:56:35 PM
Ethylbenzene	ND	0.10	µg/L	1	6/25/2007 12:56:35 PM
Xylenes, Total	1.0	0.30	µg/L	1	6/25/2007 12:56:35 PM
Surr: 1,2-Dichloroethane-d4	93.6	50.9-168	%REC	1	6/25/2007 12:56:35 PM
Surr: 4-Bromofluorobenzene	90.4	71.2-123	%REC	1	6/25/2007 12:56:35 PM
Surr: Dibromofluoromethane	89.6	64.7-142	%REC	1	6/25/2007 12:56:35 PM
Surr: Toluene-d8	86.3	81.9-122	%REC	1	6/25/2007 12:56:35 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 11/16
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Containinant Level
- RL Reporting Limit

Hall Envir	onmental Analysi	02-Ju	1-07						
CLIENT: Lab Order:	San Juan Refining 0706279	2007 1/		С	lient Sa Collecti	mple ID: on Date:	TP- #10 6/19/2007 9:40:00 AM		
Project: Lab ID:	0706279-10	-2007-vapor			Date F	leceived: Matrix:	6/20/: AIR	2007	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed	
EPA METHOD	8015B: GASOLINE RANG			Analyst: NSB					
Gasoline Range		µg/L		1	6/25/2007 1:23:52 PM				
Surr: BFB		124	84.5-129		%REC		1	6/25/2007 1:23:52 PM	
EPA METHOD	8260B: VOLATILES							Analyst: LMM	
Benzene		ND	0.10		µg/L		1	6/25/2007 12:17:48 PM	
Toluene		ND	0.10		µg/L		1	6/25/2007 12:17:48 PM	
Ethylbenzene		ND	0.10		µg/L		1	6/25/2007 12:17:48 PM	
Xylenes, Total		1.0	. 0.30		µg/L		1	6/25/2007 12:17:48 PM	
Surr: 1,2-Dic	hloroethane-d4	94.6	50.9-168		%REC		1	6/25/2007 12:17:48 PM	
Surr: 4-Brom	ofluorobenzene	89.1	71.2-123		%REC		1	6/25/2007 12:17:48 PM	
Surr: Dibrom	ofluoromethane	91.9	64,7-142		%REC		1	6/25/2007 12:17:48 PM	
<ul> <li>Surr: Toluen</li> </ul>	e-d8	85.4	81.9-122		%REC		1	6/25/2007 12:17:48 PM	

Qualifiers: \* Е

Value exceeds Maximum Contaminant Level

Value above quantitation range J

Analyte detected below quantitation limits

- ND Not Detected at the Reporting Limit
- Spike recovery outside accepted recovery limits S

10/16

- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

В

Page 10 of 13

·····										
CLIENT:	San Juan Refining			C	lient Sample ID:	TP- #11				
Lab Order:	0706279				Collection Date:	6/19/2	2007 11:25:00 AM			
Project:	River Terrace-2nd Qtr	-2007-Vapor			Date Received:	6/20/2	6/20/2007			
Lab ID:	0706279-09				Matrix:		AIR			
Analyses	··· ·	Result	PQL	Qual	Units	DF	Date Analyzed			
EPA METHOD					Analyst: NSB					
Gasoline Range Organics (GRO)		7.2	5.0		µg/L	1	6/25/2007 12:53:19 PM			
Surr: BFB		116	84.5-129		%REC	1	6/25/2007 12:53:19 PM			
EPA METHOD	8260B: VOLATILES						Analyst: SMP			
Benzene		ND	0.10		μg/L	1	6/25/2007 10:42:24 AM			
Toluene		ND	0.10		µg/L	1	6/25/2007 10:42:24 AM			
Ethylbenzene		ND	0.10		µg/L	1	6/25/2007 10:42:24 AM			
Xylenes, Total		0.74	0.30		µg/L	1	6/25/2007 10:42:24 AM			
Surr: 1,2-Dichloroethane-d4		101	50.9-168		%REC	1	6/25/2007 10:42:24 AM			
Surr: 4-Bromofluorobenzene		101	71.2-123		%REC	1	6/25/2007 10:42:24 AM			
Surr: Dibromofluoromethane 1		106	64.7-142		%REC	1	6/25/2007 10:42:24 AM			
Surr: Toluene-d8		98.1	81.9-122		%REC	1	6/25/2007 10:42:24 AM			

Date: 02-Jul-07

Ou	alif	ìer	s:	

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 9 of 13

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706279 River Terrace-2nd ( 0706279-08	Qtr-2007-Vapor		Client Sample ID: Collection Date: Date Received: Matrix:		TP- #12 6/19/2007 11:00:00 AM 6/20/2007 AIR		
Analyses	· · ·	Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8015B: GASOLINE RA	ANGE					Analyst: NSB	
Gasoline Rang	e Organics (GRO)	6.0	5.0		µg/L	1	6/25/2007 12:22:44 PM	
Surr: BFB		114	84.5-129		%REC	1	6/25/2007 12:22:44 PM	
EPA METHOD	8260B: VOLATILES						Analyst: SMP	
Benzene		ND	0.10		µg/L	1	6/25/2007 11:15:47 AM	
Toluene		ND	0.10		µg/L	1	6/25/2007 11:15:47 AM	
Ethylbenzene		ND	0.10		µg/L	1	6/25/2007 11:15:47 AM	
Xylenes, Total		0.56	0.30		µg/L	1	6/25/2007 11:15:47 AM	
Surr: 1,2-Dic	chloroethane-d4	98.4	50.9-168		%REC	1	6/25/2007 11:15:47 AM	
Surr: 4-Bron	ofluorobenzene	99.1	71.2-123		%REC	1	6/25/2007 11:15:47 AM	
Surr: Dibron	nofluoromethane	105	64.7-142		%REC	1	6/25/2007 11:15:47 AM	
Surr: Toluen	e-d8	102	81.9-122		%REC	1	6/25/2007 11:15:47 AM	

Date: 02-Jul-07

Value exceeds Maximum Contaminant Level Value above quantitation range

- Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

Qualifiers:

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8/16

В

Н

Page 8 of 13

Analyte detected in the associated Method Blank

MCL Maximum Contaminant Level

RL Reporting Limit

Holding times for preparation or analysis exceeded

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706279 River Terrace-2nd Qtr- 0706279-07	2007-Vapor		Client Sample ID: Collection Date: Date Received: Matrix:		TP- #13 6/19/2007 10:30:00 AM 6/20/2007 AIR		
Analyses		Result	PQL Qua	units	DF	Date Analyzed		
EPA METHOD	8015B: GASOLINE RANG	E				Analyst: NSB		
Gasoline Range	Organics (GRO)	5.8	5.0	µg/L	1	6/25/2007 11:52:01 AM		
Surr: BFB		113	84.5-129	%REC	1	6/25/2007 11:52:01 AM		
EPA METHOD	8260B: VOLATILES					Analyst: SMP		
Benzene		ND	0.10	µg/L	1	6/25/2007 11:49:12 AM		
Toluene		ND	0.10	µg/L	1	6/25/2007 11:49:12 AM		
Ethylbenzene		ND	0.10	µg/L	1	6/25/2007 11:49:12 AM		
Xylenes, Total		0.60	0.30	µg/L	1	6/25/2007 11:49:12 AM		
Surr: 1,2-Dict	nloroethane-d4	100	50.9-168	%REC	1	6/25/2007 11:49:12 AM		
Surr: 4-Brome	ofluorobenzene	102	71.2-123	%REC	1	6/25/2007 11:49:12 AM		
Surr: Dibrome	ofluoromethane	105	64.7-142	%REC	1	6/25/2007 11:49:12 AM		
Surr: Toluene	e-d8	95.3	81.9-122	%REC	1	6/25/2007 11:49:12 AM		

**Date:** 02-Jul-07

Value exceeds Maximum Contaminant Level	В	Analyte de
Value above quantitation range	Н	Holding tir
Analyte detected below quantitation limits	MCL	Maximum

ND Not Detected at the Reporting Limit

Qualifiers:

Е

J

- S Spike recovery outside accepted recovery limits 7/16
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



CLIENT:San Juan RefiningLab Order:0706279Project:River Terrace-2nd QLab ID:0706279-06			Client Sample ID: 7 Collection Date: 6				TP- #2 6/18/2007 2:10:00 PM		
		Qtr-2007-Vapor		Date Received: Matrix:		6/20/2007 AIR			
Analyses		Result	PQL	Qual Units		DF .	Date Analyzed		
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB		
Gasoline Rang	e Organics (GRO)	10	5.0	µg/L		1	6/24/2007 9:51:12 PM		
Surr: BFB	-	108	84.5-129	%REC		1	6/24/2007 9:51:12 PM		
EPA METHOD	8260B: VOLATILES						Analyst: SMP		
Benzene		ND	0.10	µg/L		1	6/25/2007 12:22:36 PM		
Toluene		ND	0.10	µg/L		1	6/25/2007 12:22:36 PM		
Ethylbenzene		ND	0.10	µg/L		1	6/25/2007 12:22:36 PM		
Xylenes, Total		1.4	0.30	µg/L		1	6/25/2007 12:22:36 PM		
Surr: 1,2-Die	chloroethane-d4	99.7	50.9-168	%REC		1	6/25/2007 12:22:36 PM		
Surr: 4-Bron	nofluorobenzene	104	71.2-123	%REC		1	6/25/2007 12:22:36 PM		
Surr: Dibron	nofluoromethane	104	64.7-142	%REC		1	6/25/2007 12:22:36 PM		
Surr: Toluer	ne-d8	94.7	81.9-122	%REC		1	6/25/2007 12:22:36 PM		

Date: 02-Jul-07

Qualifiers:

\*

- Value exceeds Maximum Contaminant Level
- Е Value above quantitation range
- Analyte detected below quantitation limits J
- Not Detected at the Reporting Limit ND
- Spike recovery outside accepted recovery limits S
- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

В

Page 6 of 13

Date: 02-Jul-07

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706279 River Terrace-2nd Qtr 0706279-05	-2007-Vapor		Client San Collectio Date R	nple ID: on Date: eceived: Matrix:	TP- # 6/18/2 6/20/2 AIR	5 2007 1:45:00 PM 2007
Analyses		Result	PQL	Qual Units		DF	Date Analyzed
EPA METHOD 80	15B: GASOLINE RAN	GE					Analyst: NSB
Gasoline Range C	Drganics (GRO)	9000	250	µg/L		50	6/24/2007 11:23:21 PM
Surr: BFB		118	84.5-129	%REC		50	6/24/2007 11:23:21 PM
EPA METHOD 82	260B: VOLATILES						Analyst: SMP
Benzene		ND	5.0	μg/L		50	6/25/2007 11:20:06 AM
Toluene		ND	5.0	μg/L		50	6/25/2007 11:20:06 AM
Ethylbenzene		ND	5.0	μg/L		50	6/25/2007 11:20:06 AM
Xylenes, Total		1500	30	µg/L		100	6/25/2007 12:31:50 PM
Surr: 1,2-Dichlo	proethane-d4	100	50.9-168	%REC		50	6/25/2007 11:20:06 AM
Surr: 4-Bromofl	luorobenzene	99.2	71.2-123	%REC		50	6/25/2007 11:20:06 AM
Surr: Dibromofl	uoromethane	99.4	64.7-142	%REC		50	6/25/2007 11:20:06 AM
Surr: Toluene-o	8t	100	81.9-122	%REC		50	6/25/2007 11:20:06 AM

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

. . . . . CLIENT: Lab Order: **Project:** Lab ID:

San Juan Refining 0706279 River Terrace-2nd Qtr-2007-Vapor 0706279-04

Date: 02-Jul-07

Client Sample ID: TP-#6 Collection Date: 6/18/2007 1:20:00 PM Date Received: 6/20/2007 Matrix: AIR

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANG	Ε		<b></b>		Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	µg/L	1	6/24/2007 9:20:37 PM
Surr: BFB	109	84.5-129	%REC	1	6/24/2007 9:20:37 PM
EPA METHOD 8260B: VOLATILES					Analyst: SMP
Benzene	ND	0.10	µg/L	1	6/25/2007 10:44:22 AM
Toluene	ND	0.10	µg/L	1	6/25/2007 10:44:22 AM
Ethylbenzene	ND	0.10	µg/L	1	6/25/2007 10:44:22 AM
Xylenes, Total	ND	0.30	µg/L	1	6/25/2007 10:44:22 AM
Surr: 1,2-Dichloroethane-d4	99.0	50.9-168	%REC	1	6/25/2007 10:44:22 AM
Surr: 4-Bromofluorobenzene	108	71.2-123	%REC	- 1	6/25/2007 10:44:22 AM
Surr: Dibromofluoromethane	93.1	64.7-142	%REC	1	6/25/2007 10:44:22 AM
Surr: Toluene-d8	102	81.9-122	%REC	1	6/25/2007 10:44:22 AM

Qualifiers:

Value exceeds Maximum Contaminant Level

E Value above quantitation range

Analyte detected below quantitation limits J

ND Not Detected at the Reporting Limit

- Spike recovery outside accepted recovery limits S
- Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

В

Page 4 of 13

CLIENT: San Juan Refining			С	lient Sample ID:	D: TP-#8			
Lab Order: 🕚	0706279				Collection Date: 6/18/2007 12:55:00 PM			
Project: River Terrace-2nd Qtr-20		tr-2007-Vapor			Date Received:	6/20/2007		
Lab ID:	0706279-03				Matrix:	AIR		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8015B: GASOLINE RAN	NGE					Analyst: NSB	
Gasoline Range	e Organics (GRO)	ND	5.0		µg/L	1	6/25/2007 11:21:30 AM	
Surr: BFB		107	84.5-129		%REC	1	6/25/2007 11:21:30 AM	
EPA METHOD	8260B: VOLATILES						Analyst: SMP	
Benzene		ND	0.10		µg/L	1	6/25/2007 10:08:45 AM	
Toluene		ND	0.10		µg/L	1	6/25/2007 10:08:45 AM	
Ethylbenzene		ND	0.10		µg/L	1	6/25/2007 10:08:45 AM	
Xylenes, Total		ND	0.30		µg/L	1	6/25/2007 10:08:45 AM	
Surr: 1,2-Dic	hloroethane-d4	104	50.9-168		%REC	1	6/25/2007 10:08:45 AM	
Surr: 4-Brom	ofluorobenzene	107	71.2-123		%REC	1	6/25/2007 10:08:45 AM	
Surr: Dibrom	ofluoromethane	97.3	64.7-142		%REC	1	6/25/2007 10:08:45 AM	
Surr: Toluene	e-d8	102	81.9-122		%REC	1	6/25/2007 10:08:45 AM	

Date: 02-Jul-07

Value above quantitation range Analyte detected below quantitation limits Not Detected at the Reporting Limit

Value exceeds Maximum Contaminant Level

ND S

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Qualifiers:

- Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method.Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- . RL Reporting Limit

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706279 River Terrace-2nd Qtr- 0706279-02	2007-Vapor	Client Sample ID: Collection Date: Or Date Received: Matrix:		: TP- # : 6/18/2 : 6/20/2 : AIR	TP- #1 6/18/2007 11:00:00 AM 6/20/2007 AIR	
Analyses		Result	PQL	Qual Units	DF	Date Analyzed	
EPA METHOD 8	015B: GASOLINE RANG	GE				Analyst: NSB	
Gasoline Range	Organics (GRO)	7.4	5.0	µg/L	1	6/25/2007 10:51:09 AM	
Surr: BFB		106	84.5-129	%REC	1	6/25/2007 10:51:09 AM	
EPA METHOD 8	260B: VOLATILES					Analyst: SMP	
Benzene		ND	0.10	µg/L	1	6/25/2007 9:33:15 AM	
Toluene		ND	0.10	µg/L	1	6/25/2007 9:33:15 AM	
Ethylbenzene		0.28	0.10	µg/L	1	6/25/2007 9:33:15 AM	
Xylenes, Total		1.0	0.30	µg/L	1	6/25/2007 9:33:15 AM	
Surr: 1,2-Dich	loroethane-d4	99.4	50.9-168	%REC	1	6/25/2007 9:33:15 AM	
Surr: 4-Bromo	ofluorobenzene	101	71.2-123	%REC	1	6/25/2007 9:33:15 AM	
Surr: Dibromo	ofluoromethane	93.1	64.7-142	%REC	1	6/25/2007 9:33:15 AM	
Surr: Toluene	e-d8	106	81.9-122	%REC	1	6/25/2007 9:33:15 AM	

Date: 02-Jul-07

# Hall Environmental Analysis Laboratory, Inc.

Value exceeds Maximum Contaminant Level

E Value above quantitation range

Qualifiers:

\*

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- RL Reporting Limit

MCL Maximum Contaminant Level

Analyte detected in the associated Method Blank

Holding times for preparation or analysis exceeded

В

Н
Date: 02-Jul-07

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining     Client Sample I       er:     0706279     Collection Da       River Terrace-2nd Qtr-2007-Vapor     Date Receiv       0706279-01     Matr			lient Sample ID: Collection Date: Date Received: Matrix:	MW : 6/18/2 6/20/2 AIR	#49 2007 10:10:00 AM 2007	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: GASOLINE RA	NGE			· · · · · · ·		Analyst: NSB
Gasoline Rang	e Organics (GRO)	11	5.0		μg/L	1	6/24/2007 8:50:07 PM
Surr: BFB		124	84.5-129		%REC	1	6/24/2007 8:50:07 PM
EPA METHOD	8260B: VOLATILES						Analyst: SMP
Benzene		ND	0.10		µg/L	1	6/25/2007 8:56:06 AM
Toluene		ND	0.10		µg/L	1	6/25/2007 8:56:06 AM
Ethylbenzene		ND	0.10		µg/L	1	6/25/2007 8:56:06 AM
Xylenes, Total		ND	0.30		µg/L	1	6/25/2007 8:56:06 AM
Surr: 1,2-Dic	chloroethane-d4	101	50.9-168		%REC	1	6/25/2007 8:56:06 AM
Surr: 4-Brom	nofluorobenzene	106	71.2-123		%REC	1	6/25/2007 8:56:06 AM
Surr: Dibrom	ofluoromethane	91.5	64.7-142		%REC	1	6/25/2007 8:56:06 AM
Surr: Toluen	ie-d8	104	81.9-122		%REC	1	6/25/2007 8:56:06 AM

Qualifiers:

\*

- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 13

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#### COVER LETTER

Monday, July 02, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace-2nd Qtr-2007-Vapor

Order No.: 0706279

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 13 sample(s) on 6/20/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 B Fax 505.345.4107 www.hallenvironmental.com

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com	ANNALYSIS RECUEST	s (8021) (8022) (8082) (8082) (8082)	PE - 1-TMB's BE + TPH (G a 80156 (Ga b 418.1) b 4504.1) b 4504.1) b 4504.1) b 402, 10 c 10, 10 c 10, 10 c 10 c 10 c 10 c 10 c 10 c 10 c 10 c	Hr + X3T8 Hr + X3T8 HT + X3T8 TPH Metho TPH Metho						XX 1X				Remarks:	
QA/ QC Package: Std D Level 4 D Other: Project Name:	Project #:	Project Manager:	Sample Femperature: / Bab Kra Kow	Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> OTOZZ	1-Teclar	2	M			2	2			Received By: (Signature) Z(27/05)	
CHAIN-OF-CUSTODY RECORD Client: JAN Juen Refining	Address: #52 Rd 490	Sloom field N/M B2410	Phone #: 505-632-4161 Fax #: 505-632-3911	Date Time Matrix Sample I.D. No.	2.3607 BLOOK TP-B	10m 172-5	1039 1 TP-2	12351 / P- Co	(-dt.   Md	1200, 1729	1 Roal 1 12/2			Nate: Time: Relinquiched BY: (Signaturg) Nation 715 M (MAC) 1700 Nate: Time Relinquiched By: (Signature)	

**.** .

· · · ·	Sample Re	ceipt Che	ecklist				
Client Name SJR	· .		Date and Time	Received:		2/2	27/2007
Work Order Number 0702317			Received by	TLS			
Checklist completed by		Jeb Date	07,07				
Matrix	Carrier name <u>UP</u>	<u>'S</u>			÷		
Shipping container/cooler in good condition?	Ye	s 🗹	No 🗌	Not Present			
Custody seals intact on shipping container/cooler?	· Ye	s 🔽	No 🗋 .	Not Present		Not Shipped	
Custody seals intact on sample bottles?	Ye	s 🗌	No 🗌	N/A	$\checkmark$		
Chain of custody present?	Ye	s 🔽	No 🗌				
Chain of custody signed when relinquished and rece	ived? , Ye	s 🔽	No 🗌				
Chain of custody agrees with sample labels?	Ye	s 🗹	No				
Samples in proper container/bottle?	Ye	s 🗹	No 🗌				
Sample containers intact?	Ye	s 🗹	No 🗌		,		
Sufficient sample volume for indicated test?	Ye	s 🔽	No 🗌				
All samples received within holding time?	Ye	s 🔽	No 🗔				
Water - VOA vials have zero headspace?	lo VOA vials submitte	d 🗹 .	Yes	No			
Water - Preservation labels on bottle and cap match	i? Ye	es 🗌	No 🗔	N/A 🔽			
Water - pH acceptable upon receipt?	Ye	es 🛄	No 🗌	N/A 🗹	]		
Container/Temp Blank temperature?		4°	4°C±2Accepta	ble		·	
COMMENTS:			If given sufficient	time to cool.			
				,			
		•					
Client contacted Da	te contacted:		Pers	on contacted			
Contacted by: Re	garding						
Commonts							
						a_i,	
					<u>.</u>		
				<u>.</u>			
· · ·							
Corrective Action							
			·				
						·····	

# **QA/QC SUMMARY REPORT**

Client: San . Project: Divis	Juan Refining		c					**/		0700017
									rk Order:	0702317
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLim	it %F	۲PD F	RPDLimit Qu	ial ·
Method: SW8015										
Sample ID: 5ML REAGE	NT BLA	MBLK			Batch	ID: <b>R226</b>	<b>531</b> Ana	ilysis Date	: 2/27/2007	7:28:51 AM
Gasoline Range Organics	(GRO) ND	mg/L	0.050							
Sample ID: 2.5UG GRO	LCS	LCS			Batch	ID: <b>R22</b> 6	531 Ana	lysis Date	e: 2/27/2007	9:04:06 PM
Gasoline Range Organics	(GRO) 0.5120	mg/L	0.050	102	80	115				
Method: SW8021										
Sample ID: 5ML REAGE	NT BLA	MBLK			Batch	ID: R220	5 <b>31</b> Ana	alysis Date	2/27/200	77:28:51 AM
Benzene	ND	µg/L	1.0							
Foluene	ND	µg/L	1.0							
Ethylbenzene	ND	µg/L	1.0							
Xylenes, Total	ND	µg/L	2.0					•		
1,2,4-Trimethylbenzene	ND	µg/L	1.0							
1,3,5-Trimethylbenzene	ND	µg/L	1.0							
Sample ID: 100NG BTE	X LCS	LCS			Batch	ID: <b>R22</b>	631 Ana	alysis Date	e: 2/27/200	7 8:02:49 PM
Benzene	20.88	µg/L	1.0	104	85.9	113				
Toluene	20.77	µg/L	1.0	104	86.4	113				
Ethylbenzene	21.09	µg/L	1.0	105	83.5	118				
Xylenes, Total	43.04	µg/L	2.0	108	83.4	122				
1,2,4-Trimethylbenzene	20.33	µg/L	1.0	102	83.5	115				
1,3,5-Trimethylbenzene	20.93	μg/L	1.0	105	85.2	113				
Method: SW8015										
Sample ID: 5ML REAGE	ENT BLA	MBLK			Batch	ID: <b>R22</b>	<b>641</b> An	alysis Date	e: 2/28/200	7 8:40:46 AM
Gasoline Range Organics	(GRO) ND	mg/L	0.050							
Sample ID: 2.5UG GRO	LCS	LCS			Batch	ID: <b>R22</b>	<b>641</b> An	alysis Date	e: 2/28/200	7 4:43:18 PM
Gasoline Range Organics	(GRO) 0.5440	mg/L	0.050	109	80	115				
Method: SW8021										
Sample ID: 5ML REAGE	ENT BLA	MBLK			Batch	ID: <b>R22</b>	<b>641</b> An	alysis Date	e: 2/28/200	7 8:40:46 AM
Benzene	ND	µg/L	1.0		```					
Toluene	ND	ua/L	1.0							
Ethylbenzene	ND	µg/L	1.0							
Xylenes, Total	ND	µg/L	2.0							
1,2,4-Trimethylbenzene	ND	µg/L	1.0							
1,3,5-Trimethylbenzene	ND	µg/L	1.0							
Sample ID: 100NG BTE	XLCS	LCS			Batch	ID: R22	641 An	alysis Date	e: 2/28/200	7 3:42:30 PM
Benzene	21.61	µa/L	1.0	108	85.9	113				
Toluene	21.25	ua/L	1.0	106	86.4	113				
Ethylbenzene	21.37	uo/I	1.0	107	83.5	118				
Xvlenes, Total	45.32	ua/L	2.0	113	83.4	122				
1.2.4-Trimethvlbenzene	21.13	uo/l	1.0	106	83.5	115				
1 3 5-Trimethylbenzene	21.80	H0/1	1.0	109	85.2	113				
.,.,	21.00	r-3'		,00	50.L					,

Qualifiers:
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- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 9/10

Page I

Date: 01-Mar-07

**CLIENT:** Lab Order: **Project:** Lab ID:

#### San Juan Refining 0702317 River Terrace - 1st Quarter 2007-VS

0702317-07

Client Sample ID: TP-12 Collection Date: 2/26/2007 2:20:00 PM Date Received: 2/27/2007 Matrix: AIR

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	NGE		······	1	Analyst: NSB
Gasoline Range Organics (GRO)	61	5.0	µg/L	1	2/27/2007 12:52:43 PM
Surr: BFB	128	84.5-129	%REC	1	2/27/2007 12:52:43 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	1	2/27/2007 12:52:43 PM
Toluene	ND	0.10	µg/L	1.	2/27/2007 12:52:43 PM
Ethylbenzene	1.1	0.10	µg/L	1	2/27/2007 12:52:43 PM
Xylenes, Total	11	0.30	µg/L	1	2/27/2007 12:52:43 PM
Surr: 4-Bromofluorobenzene	97.2	70.2-105	%REC	1	2/27/2007 12:52:43 PM

Qualifiers:

- Value exceeds Maximum Contaminant Level \*
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Not Detected at the Reporting Limit ND
- S Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall	Environmenta	l Analysis	Laboratory,	Inc.
		•		

**CLIENT:** Client Sample ID: TP-9 San Juan Refining Lab Order: 0702317 Collection Date: 2/26/2007 1:30:00 PM **Project:** River Terrace - 1st Quarter 2007-VS Date Received: 2/27/2007 Matrix: AIR Lab ID: 0702317-06

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	NGE					Analyst: NSB
Gasoline Range Organics (GRO)	290	5.0		µg/L	1	2/27/2007 12:22:22 PM
Surr: BFB	168	84.5-129	S	%REC	1	2/27/2007 12:22:22 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.10		µg/L	1	2/27/2007 12:22:22 PM
Toluene	0.15	0.10		µg/L	1	2/27/2007 12:22:22 PM
Ethylbenzene	4.3	0.10		µg/L	1	2/27/2007 12:22:22 PM
Xylenes, Total	41	1.5		µg/L	5	2/27/2007 7:02:24 PM
Surr: 4-Bromofluorobenzene	104	70.2-105		%REC	1	2/27/2007 12:22:22 PM

Qualifiers:

\* Value exceeds Maximum Contaminant Level

Ê Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits S

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

Date: 01-Mar-07

RL Reporting Limit

Page 6 of 7



CLIENT:San Juan RefiningClient Sample ID: TP-1Lab Order:0702317Collection Date: 2/26/2007 1:00:00 PMProject:River Terrace - 1st Quarter 2007-VSDate Received: 2/27/2007Lab ID:0702317-05Matrix: AIR

Result	PQL Qu	al Units	DF	Date Analyzed
				Analyst: NSB
7300	250	µg/L	50	2/27/2007 4:27:21 PM
130	84.5-129 S	%REC	50	2/27/2007 4:27:21 PM
				Analyst: NSB
6.1	5.0	µg/L	50	2/27/2007 4:27:21 PM
8.2	5.0	µg/L	50	2/27/2007 4:27:21 PM
150	5.0	µg/L	50	2/27/2007 4:27:21 PM
1200	30	µg/L	100	2/28/2007 11:08:28 AM
97.8	70.2-105	%REC	. 50	2/27/2007 4:27:21 PM
	Result           7300           130           6.1           8.2           150           1200           97.8	Result         PQL         Qu           7300         250         130         84.5-129         S           6.1         5.0         150         5.0         150         1200         30           97.8         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105         70.2-105 <td>Result         PQL         Qual         Units           7300         250         µg/L           130         84.5-129         S         %REC           6.1         5.0         µg/L           82         5.0         µg/L           150         5.0         µg/L           1200         30         µg/L           97.8         70.2-105         %REC</td> <td>Result         PQL         Qual         Units         DF           7300         250         µg/L         50           130         84.5-129         S         %REC         50           6.1         5.0         µg/L         50           8.2         5.0         µg/L         50           150         5.0         µg/L         50           1200         30         µg/L         100           97.8         70.2-105         %REC         50</td>	Result         PQL         Qual         Units           7300         250         µg/L           130         84.5-129         S         %REC           6.1         5.0         µg/L           82         5.0         µg/L           150         5.0         µg/L           1200         30         µg/L           97.8         70.2-105         %REC	Result         PQL         Qual         Units         DF           7300         250         µg/L         50           130         84.5-129         S         %REC         50           6.1         5.0         µg/L         50           8.2         5.0         µg/L         50           150         5.0         µg/L         50           1200         30         µg/L         100           97.8         70.2-105         %REC         50

Qualifiers:

\* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank

Date: 01-Mar-07

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

в



CLIENT: San Juan Refining Lab Order: 0702317 **Project:** River Terrace - 1st Quarter 2007-VS 0702317-04 Lab ID:

Date: 01-Mar-07

Client Sample ID: TP-6 Collection Date: 2/26/2007 12:35:00 PM Date Received: 2/27/2007 Matrix: AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANG	GE					Analyst: NSB
Gasoline Range Organics (GRO)	98	10		µg/L	2	2/27/2007 6:31:47 PM
Surr: BFB	198	84.5-129	S	%REC	2	2/27/2007 6:31:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.20		µg/L	2	2/27/2007 6:31:47 PM
Toluene	ND	0.20		µg/L	2	2/27/2007 6:31:47 PM
Ethylbenzene	1.0	0.20		µg/L	2	2/27/2007 6:31:47 PM
Xylenes, Total	13	0.60		µg/L	- 2	2/27/2007 6:31:47 PM
Surr: 4-Bromofluorobenzene	94.6	70.2-105		%REC	2	2/27/2007 6:31:47 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level	В	Analyte detected in the associated M	ethod Blank
	Е	Value above quantitation range	. H	Holding times for preparation or anal	ysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level	
-	ND	Not Detected at the Reporting Limit	RL	Reporting Limit	~
	S.	Spike recovery outside accepted recovery limits			Page 4 of
		5/10	)	· · · · ·	•

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CLIENT:San Juan RefiningLab Order:0702317Project:River Terrace - 1st Quarter 2007-VSLab ID:0702317-03

Date: 01-Mar-07

Client Sample ID: TP-2 Collection Date: 2/26/2007 10:35:00 AM Date Received: 2/27/2007 Matrix: AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAN	GE					Analyst: NSB
Gasoline Range Organics (GRO)	88	5.0		µg/L	1	2/27/2007 11:52:07 AM
Surr: BFB	131	84.5-129	S	%REC	1	2/27/2007 11:52:07 AM
EPA METHOD 8021B: VOLATILES						Analyst: <b>NS</b> B
Benzene	ND	0.10		µg/L	1	2/27/2007 11:52:07 AM
Toluene	ND	0.10		µg/L	1	2/27/2007 11:52:07 AM
Ethylbenzene	1.1	0.10		µg/L	1	2/27/2007 11:52:07 AM
Xylenes, Total	17	0.30		µg/L	1	2/27/2007 11:52:07 AM
Surr: 4-Bromofluorobenzene	98.7	70.2-105		%REC	1	2/27/2007 11:52:07 AM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- $\mathbf{B} = \mathbf{A}$ nalyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 3 of 7

CLIENT: San Juan Refining				C	lient Sample ID: Collection Date:	TP-5	TP-5 2/26/2007 10:10:00 AM		
Project:	River Terrace - 1st	Quarter 2007-VS	·		Date Received:	2/20/2	2007		
Lab ID:	0702317-02					AIK			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	8015B: GASOLINE RA	NGE					Analyst: NSB		
Gasoline Range	e Organics (GRO)	6100	250		µg/L	50	2/27/2007 3:56:28 PM		
Surr: BFB		133	84.5-129	S	%REC	50	2/27/2007 3:56:28 PM		
EPA METHOD	8021B: VOLATILES						Analyst: NSB		

5.0

5.0

5.0

15

70.2-105

µg/L

µg/L

µg/L

µg/L

%REC

#### Hall Environmental A

Benzene

Toluene

Ethylbenzene

Xylenes, Total

Qualifiers:

\*

Е

J

ND

S

Value exceeds Maximum Contaminant Level

Analyte detected below quantitation limits

Spike recovery outside accepted recovery limits

Value above quantitation range

Not Detected at the Reporting Limit

Surr: 4-Bromofluorobenzene

ND

9.8

23

1000

96.6

nalvsis	Laboratory.	Inc.

В Analyte detected in the associated Method Blank

- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

Date: 01-Mar-07

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2/27/2007 3:56:28 PM

2/27/2007 3:56:28 PM

2/27/2007 3:56:28 PM

2/27/2007 3:56:28 PM

2/27/2007 3:56:28 PM

RL Reporting Limit

Page 2 of 7



Date: 01-Mar-07

CLIENT:	San Juan Refining
Lab Order:	0702317
Project:	River Terrace - 1st Quarter 2007-VS
Lab ID:	0702317-01

Client Sample ID: TP-8 Collection Date: 2/26/2007 9:30:00 AM Date Received: 2/27/2007 Matrix: AIR

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Range Organics (GRO)	7100	500	µg/L	100	2/27/2007 7:32:37 PM
Surr: BFB	122	84.5-129	%REC	100	2/27/2007 7:32:37 PM
EPA METHOD 8021B: VOLATILES					Analyst: <b>NSB</b>
Benzene	ND	5.0	µg/L	50	2/27/2007 2:55:54 PM
Toluene	9.5	5.0	µg/L	50	2/27/2007 2:55:54 PM
Ethylbenzene	130	5.0	µg/L	50	2/27/2007 2:55:54 PM
Xylenes, Total	1400	30	µg/L	100	2/27/2007 7:32:37 PM
Surr: 4-Bromofluorobenzene	99.4	70.2-105	%REC	50	2/27/2007 2:55:54 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 2/10
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:San Juan RefiningProject:River Terrace - 1st Quarter 2007-VSLab Order:0702317

#### **Date:** 01-Mar-07

## CASE NARRATIVE

"S" flags denote that the surrogate was not recoverable due to sample dilution or matrix interferences.



#### COVER LETTER

Thursday, March 01, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace - 1st Quarter 2007-VS

Order No.: 0702317

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 2/27/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

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	Sample	e Receipt Ch	necklist				
Client Name SJR			Date and Tin	ne Received:		2/28/2007	7
Vork Order Number 0702369			Received t	y <sup>i</sup> tls			
1			· · ·			· ·	
Checklist completed by	×	Jeb Date	25,07	•			
J			•				
Aatrix	Carrier name	UPS	I				
Shipping container/cooler in good condition?		Yes 🗹	No 🗌	Not Present			
Custody seals intact on shipping container/cooler?		Yes 🗹	No 🗌	Not Present		Not Shipped	
Custody seals intact on sample bottles?	jë e sh <sup>ekt</sup> e e	Yes 🗌	No 🗌	N/A			
Chain of custody present?		Yes 🗹	No 🗌				
Chain of custody signed when relinquished and rece	eived?	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 🗔		-		
Water - VOA vials have zero headspace?	√o VOA vials sub	mitted 🗹	Yes	No 🗌	]		
Water - Preservation labels on bottle and cap match	1?	Yes 🗌	No 🗌	N/A 🗹	•		
Water - pH acceptable upon receipt?		Yes	No	N/A			
Container/Temp Blank temperature?			4° C ± 2 Acce If given sufficie	<i>ptable</i> ent time to cool.			
COMMENTS:							
			<u> </u>				
	·			· .			
Client contacted Da	ate contacted:		P	erson contacted	l		
Contacted by Re	- egarding			. • •			
				<u> </u>		· · · · · · · · · · · · · · · · · · ·	
Comments:							
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Corrective Action						·····	
	•						

# **QA/QC SUMMARY REPORT**

Chent: San Juan Ref:	ining							
Project: River Terrace	e - 1st Qua	rter 2007- VS					Work	<b>Order:</b> 0702369
Analyte	Result	Units	PQL	%Rec	LowLimit Hig	ghLimit	%RPD RPI	DLimit Qual
Method: SW8015								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R22641	Analysis Date:	2/28/2007 8:40:46 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R22641	Analysis Date:	2/28/2007 4:43:18 PM
Gasoline Range Organics (GRO)	0.5440	mg/L	0.050	109	80 1	115		
Method: SW8021								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R22641	Analysis Date:	2/28/2007 8:40:46 AM
Benzene	ND	μg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	μg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
1,2,4-Trimethylbenzene	ND	µg/L	1.0					
1,3,5-Trimethylbenzene	ND	µg/L	1.0					
Sample ID: 100NG BTEX LCS		LCS			Batch ID:	R22641	Analysis Date:	2/28/2007 3:42:30 PM
Benzene	21.61	µg/L	1:.0	108	85.9	113		
Toluene	21.25	µg/Ľ	1.0	106	86.4	113		,
Ethylbenzene	21.37	µg/L	1.0	107	83.5	118		
Xyienes, Total	45.32	µg/L	2.0	113	83.4	122		
1,2,4-Trimethylbenzene	21.13	µg/L	1.0	106	83.5	115		
1,3,5-Trimethylbenzene	21.80	µg/L	1.0	109	85.2	113		

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

7/8

Page 1

Date: 01-Mar-07

1. 64

CLIENT:San Juan RefiningLab Order:0702369Project:River Terrace - 1st Quarter 2007- VSLab ID:0702369-06

 Client Sample ID:
 DW #1

 Collection Date:
 2/27/2007 1:30:00 PM

 Date Received:
 2/28/2007

 Matrix:
 AIR

Analyses	Result	PQL Q	ial Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RA	ANGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	μg/L	1.	2/28/2007 2:10:11 PM
Surr: BFB	117	84.5-129	%REC	. 1	2/28/2007 2:10:11 PM ^
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	. 1	2/28/2007 2:10:11 PM
Toluene	ND	0.10	µg/L	1	2/28/2007 2:10:11 PM
Ethylbenzene	ND	0.10	µg/L	1	2/28/2007 2:10:11 PM
Xylenes, Total	ND	0.30	μg/L	1	2/28/2007 2:10:11 PM
Surr: 4-Bromofluorobenzene	87.0	70.2-105	%REC	. 1	2/28/2007 2:10:11 PM

Qualifiers:

\*

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

6/8

- B Analyté detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 6 of 6

CLIENT:San Juan RefiningLab Order:0702369Project:River Terrace - 1st Quarter 2007- VSLab ID:0702369-05

-----

Date: 01-Mar-07

 Client Sample ID:
 MW #49

 Collection Date:
 2/27/2007 12:40:00 PM

 Date Received:
 2/28/2007

 Matrix:
 AIR

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAM	IGE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0	µg/L	1	2/28/2007 1:39:39 PM
Surr: BFB	116	84.5-129	%REC	1	2/28/2007 1:39:39 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	1	2/28/2007 1:39:39 PM
Toluene	ND	0.10	µg/L	1	2/28/2007 1:39:39 PM
Ethylbenzene	ND	0.10	µg/L	1	2/28/2007 1:39:39 PM
Xylenes, Total	ND	0.30	µg/L	1	2/28/2007 1:39:39 PM
Surr: 4-Bromofluorobenzene	86.6	70.2-105	%REC	1	2/28/2007 1:39:39 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level	В	Analyte detected in the associated Method Blank
	Е	Value above quantitation range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		Page 5 of 6

Date: 01-Mar-07

CLIENT:	San Juan Refining	Client Sample ID:	TP-10
Lab Order:	0702369	<b>Collection Date:</b>	2/27/2007 10:30:00 AM
Project:	River Terrace - 1st Quarter 2007- VS	Date Received:	2/28/2007
Lab ID:	0702369-04	Matrix:	AIR
	······································		

Result	PQL Qual	Units	DF	Date Analyzed
		· · · · · · · · · · · · · · · · · · ·		Analyst: NSB
6.0	5.0	µg/L	· 1	2/28/2007 1:09:21 PM
116	84.5-129	%REC	. 1	2/28/2007 1:09:21 PM
				Analyst: NSB
ND	0.10	µg/L	1	2/28/2007 1:09:21 PM
ND	0.10	µg/L	1	2/28/2007 1:09:21 PM
ND	0.10	µg/L	. 1	2/28/2007 1:09:21 PM
0.94	0.30	µg/L	1	2/28/2007 1:09:21 PM
86.5	70.2-105	%REC	1	2/28/2007 1:09:21 PM
	6.0 116 ND ND ND 0.94 86.5	Result         PQL         Qual           6.0         5.0           116         84.5-129           ND         0.10           ND         0.10           ND         0.10           ND         0.10           ND         0.10           State         0.30           86.5         70.2-105	Result         PQL         Qual         Units           6.0         5.0         µg/L           116         84.5-129         %REC           ND         0.10         µg/L           ND         0.10         µg/L           ND         0.10         µg/L           ND         0.10         µg/L           ND         0.30         µg/L           86.5         70.2-105         %REC	Result         PQL         Qual         Units         DF           6.0         5.0         µg/L         1           116         84.5-129         %REC         1           ND         0.10         µg/L         1           ND         0.10         µg/L         1           ND         0.10         µg/L         1           ND         0.10         µg/L         1           ND         0.30         µg/L         1           86.5         70.2-105         %REC         1

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 4/8
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:San Juan RefiningLab Order:0702369Project:River Terrace - 1st Quarter 2007- VSLab ID:0702369-03

Date: 01-Mar-07

Client Sample ID: TP-3 Collection Date: 2/27/2007 10:00:00 AM Date Received: 2/28/2007 Matrix: AIR

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RAN	IGE				Analyst: NSB
Gasoline Range Organics (GRO)	13	5.0	µg/L	1	2/28/2007 12:39:08 PM
Surr: BFB	117	84.5-129	%REC	1	2/28/2007 12:39:08 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	1	2/28/2007 12:39:08 PM
Toluene	ND	0.10	µg/L	1	2/28/2007 12:39:08 PM
Ethylbenzene	0.11	0.10	µg/L	1	2/28/2007 12:39:08 PM
Xylenes, Total	1.2	0.30	µg/L	1	2/28/2007 12:39:08 PM
Surr: 4-Bromofluorobenzene	85.7	70.2-105	%REC	1	2/28/2007 12:39:08 PM

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	San Juan Refining	Client Sample ID:	TP-11
Lab Order:	0702369	<b>Collection Date:</b>	2/27/2007 9:30:00 AM
Project:	River Terrace - 1st Quarter 2007- VS	Date Received:	2/28/2007
Lab ID:	0702369-02	Matrix:	AIR
Analyses	Result I	PQL Qual Units	DF Date Analyzed

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE R	ANGE		······		Analyst: NSB
Gasoline Range Organics (GRO)	11	5.0	µg/L	1	2/28/2007 12:08:57 PM
Surr: BFB	119	84.5-129	%REC	. 1	2/28/2007 12:08:57 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	µg/L	1	2/28/2007 12:08:57 PM
Toluene	ND	0.10	hð\r	1	2/28/2007 12:08:57 PM
Ethylbenzene	. 0.11	0.10	μg/L	1	2/28/2007 12:08:57 PM
Xylenes, Total	1.4	0.30	µg/L	1 .	2/28/2007 12:08:57 PM
Surr: 4-Bromofluorobenzene	89.2	70.2-105	%REC	1.	2/28/2007 12:08:57 PM

Qualifiers: \* Val E Val

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

Date: 01-Mar-07

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Hall	Enviro	onmental	Anal	vsis ]	Labor	atory.	Inc.
			1 441001	J~~~ -			

Date: 01-Mar-07

CLIENT:San Juan RefiningLab Order:0702369Project:River Terrace - 1st Quarter 2007- VSLab ID:0702369-01

Client Sample ID: TP-13 Collection Date: 2/27/2007 9:00:00 AM Date Received: 2/28/2007 Matrix: AIR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: GASOLINE RANG	SE					Analyst: NSB
Gasoline Range Organics (GRO)	24	5.0		µg/L	1	2/28/2007 11:38:42 AM
Surr: BFB	130	84.5-129	S	%REC	1	2/28/2007 11:38:42 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	0.10		µg/L	1	2/28/2007 11:38:42 AM
Toluene	ND	0.10		µg/L	1	2/28/2007 11:38:42 AM
Ethylbenzene	0.20	0.10		µg/L	1	2/28/2007 11:38:42 AM
Xylenes, Total	. 2.9	0.30		µg/L	1	2/28/2007 11:38:42 AM
Surr: 4-Bromofluorobenzene	95.4	70.2-105		%REC	1	2/28/2007 11:38:42 AM

Qualifiers:

\*

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- 1/8
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit



### COVER LETTER

Thursday, March 01, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace - 1st Quarter 2007- VS

Dear Cindy Hurtado:

Order No.: 0702369

Hall Environmental Analysis Laboratory, Inc. received 6 sample(s) on 2/28/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

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HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D	Tel. 505.345.3975 Fax 505.345.4107		ANALYSIS REQUEST		or N)	() θου	seqeb 7) 1) 1) 1) 1) 1) 1) 1) 1) 1) 1) 1) 1) 1)	ad 80° 118E + 1004 80° 1004 80° 1004 80° 1008 1008 1008 1008 1008 1008 1008 1	F Bubble M Meth M (Met M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)M (Met)	111 111 111 111 111 111 111 111 111 11					~	×		×				ks:	
QA/ QC Package: Std 🔲 Level 4 🗍	Project Name:	Riverterrace ) " ar dorg-mile	Project #:	( <i>հ</i> լւ	Project Manager:	i()/seg 0seg) 8) \$ <b>;</b>	Bample Indy Aurtades Beb Ka, los) # = = = = = = = =	Sample Temperature: ( 23 H + 10 10 10 10 10 10 10 10 10 10 10 10 10	Preservative         HEAL No.         H Meth         M Meth           Number/Volume         I.I.         I.I.         I.I.         II.         III.         IIII.         III.         III. <td< td=""><td>HgCl<sub>2</sub> HNO<sub>3</sub> OTOCZO1 THE THE THE THE</td><td>5-VOA   Hu 7 X X</td><td>(-200 / E</td><td>5.VOA V 8 X X</td><td>-50 0 -50 0</td><td>S-VOA 1 9 X X</td><td>1-500 J 025-1</td><td>5-VOA VIO X X</td><td>5-Ver X 11 X X</td><td>1-570 X 05-1</td><td>5-104 X X X</td><td>1-500 X 13.</td><td>Regeived By: (Signature) (0/30/07 Remarks:</td><td>(Redeived By: (<del>Sign</del>ature)</td></td<>	HgCl <sub>2</sub> HNO <sub>3</sub> OTOCZO1 THE THE THE THE	5-VOA   Hu 7 X X	(-200 / E	5.VOA V 8 X X	-50 0 -50 0	S-VOA 1 9 X X	1-500 J 025-1	5-VOA VIO X X	5-Ver X 11 X X	1-570 X 05-1	5-104 X X X	1-500 X 13.	Regeived By: (Signature) (0/30/07 Remarks:	(Redeived By: ( <del>Sign</del> ature)
Chain-Of-Custody record	Olient SAN Juan Rothme		DOPH BY THE ADDA	BIRTON Fald, NM	RA413		Phone # 50.5-632. 4161	Fax # 205-633 - 3911	Date Date Matrix Sample I.D. No.		6/4/67 10404 420 TP-#13		1102 TP-#12		11364 TP-417		945A TP#10	10054 TD.#3		11500 70-#9		6/19/07 AVSAN Relinfolsched BV: (Signature)	Date:   Time:   Relinquíshéd By (Signature)

	(V or V) a	sor Headspac	elddv8.aiA								
HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com	۲۵۵۶) ۲۵۵۶) ۲۵۵۶)	(HA9 no 4 Bata Bata Bata Bata Bata No 4 CAD CAD CAD CAD CAD CAD CAD CAD CAD CAD	EDC (Meth 8310 (PN) 8310 (PN) 8081 Pest 8081 Pest 8260B (V) 82500 (Sen 7 0 (Sen 7								
	و (8021) Sasoline Only) (۱۹۶۹)	186 + 194 (Ca	EDB (Weft) LbH Wefth BLEX + W BLEX + W	XX	- × ×		× , ,	×	X	X	Bemarks:
QA/QC Package: Std Level 4 D Other: Project Name: Kiver Tercee. 2 and 2007-WATE Project #:	Project Manager:	Sample Remperature:	Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> HK-1070632PM	5-104	1-500~0 X	ζ X nes-1	5~08- X 3 1-500 X 3	5- JOH X 4	5-10A X 5	1-500 X 5 5-VOR X 6	Received By: (Signatsure) (A) (A) Received By: (Signatsure) (A) (A) Received By: (Signature)
CHAIN-OF-CUSTOOV RECORD Client: SAN Juan Refum	bloomfield NM BRHIB	Phone #: 505-633-446/ Fax #: 505-633-3911	Date Matrix Sample I.D. No.	6/18/07 1035A H20 MW#49	1115 TP-#/		(pm 1 P-# 0	130pm 72-#6	15em 72.#5	200m TP- # 2	Date: Time: Relindvished By: (Signature) bate: Time: Relinquished By; (Signature)

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Sa	mple Receipt Ch	ecklist		
Client Name SJR		Date and Tin	ne Received:	6/20/2007
Work Order Number 0706281		Received b	by TLS	
Checklist completed by Signature	0/20/07_ Date			· ·
Matrix Carrier	name <u>UPS</u>	•		
Shipping container/cooler in good condition?	Yes 🗹	.No 🗌	Not Present	,
Custody seals intact on shipping container/cooler?	Yes 🔽	No	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes 🗌	No	N/A	
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 🗌		,
Water - VOA vials have zero headspace? No VOA via	Is submitted	Yes 🔽	No	
Water - Preservation labels on bottle and cap match?	Yes 🗹	No 🗌	N/A	
Water - pH acceptable upon receipt?	Yes 🗹	No 🗌	N/A	
Container/Temp Blank temperature?	2°	4° C ± 2 Acce	otable	· · · · · · · · · · · · · · · · · · ·
COMMENTS:		If given suffici	ent time to cool.	• •
			•	
· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	
Client contacted Date contacte	ed:	P	erson contacted	
Contacted by: Regarding				
Comments: Warder added	1 ml Hi	NO3 to	HJ	
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Corrective Action	· · · · · · · · · · · · · · · · · · ·		·- · · · · · · · · · · ·	
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# <sup>9</sup>QA/QC SUMMARY REPORT

Project:	River Terrace 2	ung 2nd Qtr 20	007-Water				·	W	ork Order: 0706281
Analyte		Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit Qual
Method: SW601	0A					Batch	1224	1 Apolysis Da	to: 7/2/2007 2:42:57 PM
Barium	5241	ND	ma/L	0.020		Datch	iD. 1324	T Analysis Da	ie. 175/2007.2.42.57 F W
Chromium		ND	mg/L	0.0060	*		• .	-* <sup>*</sup> ,	, 
Lead		ND	mg/L	0.0050					
Sample ID: LCS-1	13241		LCS	• •		<ul> <li>Batch</li> </ul>	ID: <b>1324</b>	1 Analysis Da	te: 7/3/2007 2:36:54 PM
Barium		0.5090	mg/L	0.020	102	80	120		
Chromium		0.5194	mg/L	0.0060	104	80	120		
Lead		0.5088	mg/L	0.0050	102	80	120	í	

#### Qualifiers:

Value above quantitation range E

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits Н

S

Holding times for preparation or analysis exceeded ND

Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits

15/16

Page 3

## **QA/QC SUMMARY REPORT**

**Client:** San Juan Refining

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Project: River Terrace 2nd Qtr 2007-Water Work Order:

0706281

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD R	PDLimit Qual
Method: SW8021								
Sample ID: 0706281-07A MSD		MSD			Batch	ID: <b>R24153</b>	Analysis Date:	6/27/2007 10:28:03 PM
Methyl tert-butyl ether (MTBE)	8.330	µg/L	2.5	101	51.2	- 138	3.84	28
Benzene	6.186	µg/L	1.0	110	85.9	113	0.194	27
Toluene	41.38	µg/L	1.0	103	86.4	113	0.0532	19
Ethylbenzene	8.278	µg/L	1.0	105	83.5	1.18	0.434	10
Xylenes, Total	48.02	µg/L	2.0	104	83.4	122	0.677	13
Sample ID: 5ML REAGENT BLA		MBLK			Batch	ID: R24153	Analysis Date:	6/27/2007 9:15:37 AM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5					
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: 5ML REAGENT BLA	and the second	MBLK	-		Batch	ID: R24163	Analysis Date	6/28/2007 9:59:41 AM
Methyl tert-butyl ether (MTBE)	ND	μg/L	2.5					
Benzene	ND	µg/L	1.0			-		
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R24153	Analysis Date	: 6/27/2007 11:57:52 PM
Methyl tert-butyl ether (MTBE)	22.31	µg/L	2.5	112	51.2	138		
enzene	21.32	µg/L	1.0	107	85.9	113		
Toluene	21.33	µg/L	1.0	107	86.4	113		
Ethylbenzene	21.45	µg/L	1.0	107	83.5	118		
Xylenes, Total	63.41	µg/L	2.0	106	83.4	122		
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R24163	Analysis Date	: 6/28/2007 11:59:59 AM
Methyl tert-butyl ether (MTBE)	21.70	µg/L	2.5	109	51.2	138		
Benzene	21.38	μg/L	1.0	107	85.9	113		
Toluene	20.71	µg/L	1.0	104	86.4	113		
Ethylbenzene	20.80	µg/L	1.0	104	83.5	118		
Xylenes, Total	61.60	µg/L	2.0	102	83.4	122	1	
Sample ID: 0706281-07A MS		MS			Batch	ID: <b>R24153</b>	Analysis Date	6/27/2007 9:58:02 PM
Methyl tert-butyl ether (MTBE).	8.656	µg/L	2.5	105	51.2	138		
Benzene	6.198	µg/L	1.0	111	85.9	113	•	
Toluene	41.40	µg/L	1.0	103	86.4 •	113		,
Ethylbenzene	8.314	µg/L	1.0	105	83.5	118		
Xylenes, Total	47.70	µg/L	2.0	103	83.4	122		

- Qualifiers: Е
  - Value above quantitation range
  - Analyte detected below quantitation limits J
  - R RPD outside accepted recovery limits

- Holding times for preparation or analysis exceeded
- Not Detected at the Reporting Limit.
- S Spike recovery outside accepted recovery limits
  - 14/16

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ND

# **QA/QC SUMMARY REPORT**

Chent: San Juan Ref:	ınıng			×		
Project: River Terrace	2nd Qtr 2	:007-Water				Work Order: 0706281
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RPDLimit Qual
Method: SW8015						· · · · · · · · · · · · · · · · · · ·
Sample ID: MB-13223		MBLK			Batch ID: 13223	Analysis Date: 6/21/2007 10:07:39 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0		н Н	
Motor Oil Range Organics (MRO)	ND	mg/L	5.0			
Sample ID: MB-13224		MBLK			Batch ID: 13224	Analysis Date: 6/21/2007 11:52:15 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0			
Motor Oil Range Organics (MRO)	ND	mg/L	5.0			
Sample ID: LCS-13223		LCS			Batch ID: 13223	Analysis Date: 6/21/2007 10:42:20 AM
Diesel Range Organics (DRO)	4.532	mg/L	1.0	90.6	74 157	
Sample ID: LCS-13224		LCS			Batch ID: 13224	Analysis Date: 6/21/2007 12:27:31 PM
Diesel Range Organics (DRO)	4.861	mg/L	1.0	97.2	74 157	
Sample ID: LCSD-13223		LCSD			Batch ID: 13223	Analysis Date: 6/21/2007 11:17:17 AM
Diesel Range Organics (DRO)	5.076	mg/L	1.0	102	74 157	11.3 23
Sample ID: LCSD-13224		LCSD			Batch ID: 13224	Analysis Date: 6/21/2007 1:02:34 PM
Diesel Range Organics (DRO)	4.850	mg/L	1.0	97.0	74 157	0.227 23
Method: SW8015						
Sample ID: 0706281-07A MSD		MSD			Batch ID: R24153	Analysis Date: 6/27/2007 10:28:03 PM
Gasoline Range Organics (GRO)	0.4618	mg/L	0.050	92.4	80 115	0.0433 8.39
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID: R24153	Analysis Date: 6/27/2007 9:15:37 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050			
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID: R24163	Analysis Date: 6/28/2007 9:59:41 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050			
Sample ID: 2.5UG GRO LCS		LCS			Batch ID: R24153	Analysis Date: 6/27/2007 10:57:56 PM
Gasoline Range Organics (GRO)	0.5052	mg/L	0.050	101	80 115	
Sample ID: 2.5UG GRO LCS		LČS			Batch ID: R24163	Analysis Date: 6/28/2007 11:29:57 AM
Gasoline Range Organics (GRO)	0.4870	mg/L	0.050	97.4	80 115	· · · · · · · ·
Sample ID: 0706281-07A MS		MS			Batch ID: R24153	Analysis Date: 6/27/2007 9:58:02 PM
Gasoline Range Organics (GRO)	0.4620	mg/L	0.050	92.4	80 115	

- Qualifiers:
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

CLIENT:San JuanLab Order:070628Project:River TLab ID:070628	n Refining I errace 2nd Qtr 2007-Water 1-12	r	Client Sa Collect Date I	ion Date: Received: Matrix:	TP-#9 6/19/2007 1:15:00 PM 6/20/2007 AQUEOUS				
Analyses	Result	PQL	Qual Units		DF	Date Analyzed			
EPA METHOD 8015B: DIE	SEL RANGE					Analyst: SCC			
Diesel Range Organics (DR	O) D	1.0	mg/L		1	6/21/2007 10:59:58 PM			
Motor Oil Range Organics (I	MRO) ND	5.0	mg/L		1	6/21/2007 10:59:58 PM			
Surr: DNOP	109	58-140	%REC	^	1	6/21/2007 10:59:58 PM			
EPA METHOD 8015B: GA	SOLINE RANGE					Analyst: <b>NSB</b>			
Gasoline Range Organics (	GRO) ND	0.050	mg/L		1	6/28/2007 7:12:02 AM			
Surr: BFB	95.1	79.2-121	%REC		1	6/28/2007 7:12:02 AM			
EPA METHOD 8021B: VC						Analyst: NSB			
Methyl tert-butyl ether (MTB	E) ND	2.5	ug/L		1	6/28/2007 7:12:02 AM			
Benzene	ND	1.0	µg/L		1	6/28/2007 7:12:02 AM			
Toluene	ND	1.0	μg/L		1	6/28/2007 7:12:02 AM			
Ethylbenzene	ND	1.0	µg/L		1	. 6/28/2007 7:12:02 AM			
Xylenes, Total	ND	2.0	µg/L		1	6/28/2007 7:12:02 AM			
Surr: 4-Bromofluorobenzo	ene 87.7	70.2-105	%REC		1	6/28/2007 7:12:02 AM			
EPA 6010B: TOTAL REC	OVERABLE METALS					Analyst: CMS			
Barium	0.91	0.020	mg/L		1	7/3/2007 3:33:52 PM			
Chromium	0.018	0.0060	mg/L		1	7/3/2007 3:33:52 PM			
Lead	0.020	0.0050	mg/L		1	7/3/2007 3:33:52 PM			

**Date:** 05-Jul-07

Qualifiers: \* Value exceeds Maximum Contaminant Level В Analyte detected in the associated Method Blank Ε Value above quantitation range Н Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits MCL Maximum Contaminant Level ND Not Detected at the Reporting Limit RL Reporting Limit ÷

S

Spike recovery outside accepted recovery limits

Page 12 of 12

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706281 River Terrace 2nd Qtr 0706281-11	2007-Water		Client Sample Collection D Date Receiv Mat	<b>ID:</b> TP-#3 ate: 6/19/2 ved: 6/20/2 rix: AQUI	TP-#3 6/19/2007 10:05:00 AM 6/20/2007 AQUEOUS	
Analyses		Result	PQL (	Qual Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC	
Diesel Range O	rganics (DRO)	ND	1.0	mg/L	1	6/21/2007 9:49:58 PM	
Motor Oil Range	e Organics (MRO)	ND -	5.0	mg/L	1	6/21/2007 9:49:58 PM	
Surr: DNOP		110	58-140	%REC	1	6/21/2007 9:49:58 PM	
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB	
Gasoline Range	e Organics (GRO)	ND	0.050	mg/L	1	6/28/2007 6:41:56 AM	
Surr: BFB		96.5	<b>79.2-1</b> 21	%REC	1	6/28/2007 6:41:56 AM	
EPA METHOD	8021B: VOLATILES					Analyst: NSB	
Methyl tert-buty	I ether (MTBE)	ND	2.5	µg/L	1	6/28/2007 6:41:56 AM	
Benzene		ND	1.0	µg/L	1	6/28/2007 6:41:56 AM	
Toluene		ND	1.0	µg/L	1	6/28/2007 6:41:56 AM	
Ethylbenzene		ND	1.0	µg/L	1	6/28/2007 6:41:56 AM	
Xylenes, Total		ND	2.0	µg/L	1	6/28/2007 6:41:56 AM	
Surr: 4-Brom	ofluorobenzene	88.8 .	70.2-105	%REC	1	6/28/2007 6:41:56 AM	
EPA 6010B: TO	OTAL RECOVERABLE M	ETALS				Analyst: CMS	
Barium		0.20	0.020	mg/L	1	7/3/2007 3:31:19 PM	
Chromium		0.0083	0.0060	mg/L	1	7/3/2007 3:31:19 PM	
Lead		0.0073	0.0050	mg/L	1	7/3/2007 3:31:19 PM	

**Date:** 05-Jul-07

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
  - E Value above quantitation range
  - J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 11 of 12



CLIENT: Lab Order:	San Juan Refining 0706281	· · · · · · · · · · · · · · · · · · ·		Client Sample ID Collection Date	: TP-#1 : 6/19/2	0 2007 9:45:00 AM	
Project:	River Terrace 2nd Qtr 2007-Water			Date Received	: 6/20/2	6/20/2007	
Lab ID:	0706281-10	/		Matrix	latrix: AQUE	EOUS	
Analyses		Result	PQL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8	015B: DIESEL RANGE		.`			Analyst: SCC	
Diesel Range Org	ganics (DRO)	ND	1.0	mg/L	1	6/21/2007 9:14:59 PM	
Motor Oil Range	Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 9:14:59 PM	
Surr: DNOP		110	58-140	%REC	1	6/21/2007 9:14:59 PM	
EPA METHOD 8	015B: GASOLINE RAI	NGE				Analyst: NSB	
Gasoline Range	Organics (GRO)	ND	0.050	mg/L	1	6/28/2007 6:12:01 AM	
Surr: BFB		94.2	79.2-121	%REC	1	6/28/2007 6.12:01 AM	
EPA METHOD 8	021B: VOLATILES					Analyst: NSB	
Methyl tert-butyl	ether (MTBE)	' ND	2.5	µg/L	1	6/28/2007 6:12:01 AM	
Benzene		ND	1.0	µg/L	1	6/28/2007 6:12:01 AM	
Toluene		ND	1.0	µg/L	1	6/28/2007 6:12:01 AM	
Ethylbenzene		ND	1.0	µg/L	1	6/28/2007 6:12:01 AM	
Xylenes, Total		ND	2.0	µg/L	1	6/28/2007 6:12:01 AM	
Surr: 4-Bromo	fluorobenzene	86.5	70.2-105	%REC	1	6/28/2007 6:12:01 AM	
EPA 6010B: TO	TAL RECOVERABLE	METALS				Analyst: CMS	
Barium		0.41	0.020	mg/L	1	7/3/2007 3:23:51 PM	
Chromium		0.024	0.0060	mg/L	1 .	7/3/2007 3:23:51 PM	
Lead		0.0089	0.0050	mg/L	·1 ,	7/3/2007 3:23:51 PM	

Date: 05-Jul-07

Qualifiers:

Value exceeds Maximum Contaminant Level

E Value above quantitation range

J \_ Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

В

Page

10/16

Page 10 of 12

			r i h				
CLIENT:	San Juan Refining	`		Client Sample ID:	TP-#1	1	
Lab Order:	0706281		21	<b>Collection Date:</b>	6/19/2007 11:30:00 AM		
Project: River Terrace 2nd Q		2007-Water		Date Received:	6/20/2007		
Lab ID:	0706281-09			Matrix:	AQUEOUS		
Analyses	· · · · · · · · · · · · · · · · · · ·	Result	PQL	Qual Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC	
Diesel Range C	Organics (DRO)	ND	1.0	mg/L	1	6/21/2007 8:39:58 PM	
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 8:39:58 PM	
Surr: DNOP		112	58-140	%REC	1	6/21/2007 8:39:58 PM	
EPA METHOD	8015B: GASOLINE RANG	E .				Analyst: NSB	
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	6/28/2007 5:42:04 AM	
Surr: BFB		95.4	79.2-121	%REC	1	6/28/2007 5:42:04 AM	
EPA METHOD	8021B: VOLATILES	-				Analyst: NSB	
Methyl tert-buty	yl ether (MTBE)	ND	2.5	µg/L	1	6/28/2007 4:32:44 PM	
Benzene		ND	1.0	µg/L	1	6/28/2007 4:32:44 PM	
Toluene		ND	1.0	µg/L	1	6/28/2007 4:32:44 PM	
Ethylbenzene		ND	1.0	µg/L	1	6/28/2007 4:32:44 PM	
Xylenes, Total		ND	2.0	µg/L	1	6/28/2007 4:32:44 PM	
Surr: 4-Bron	nofluorobenzene	89.9	70.2-105	%REC	1	6/28/2007 4:32:44 PM	
EPA 6010B: T	OTAL RECOVERABLE MI	ETALS				Analyst: CMS	
Barium		0.33	0.020	mg/L	1	7/3/2007 3:21:22 PM	
Chromium		0.013	0.0060	mg/L	1	7/3/2007 3:21:22 PM	
Lead		0.015	0.0050	mg/L	1	7/3/2007 3:21:22 PM	

**Date:** 05-Jul-07

Qualifiers:

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Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

В

Han Environmental Analysis Laboratory, Inc.								
CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706281 River Terrace 2nd Qtr 0706281-08	2007-Water	- · · · ·	Client Sample ID: Collection Date: Date Received: Matrix:	: TP-#12 : 6/19/2007 11:05:00 AM : 6/20/2007 : AQUEOUS			
Analyses	· · · · · · · · · · · ·	Result	PQL Qua	l Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE			· · · · · · · · · · · · · · · · · · ·		Analyst: SCC		
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	6/21/2007 8:04:58 PM		
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L -	1	6/21/2007 8:04:58 PM		
Surr: DNOP		108	58-140	%REC	1,	6/21/2007 8:04:58 PM		
EPA METHOD	8015B: GASOLINE RANG	GE				Analyst: NSB		
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	6/28/2007 5:12:02 AM		
Surr: BFB		98.3	79.2-121	%REC	1	6/28/2007 5:12:02 AM		
EPA METHOD	8021B: VOLATILES					Analyst: NSE		
Methyl tert-but	yl ether (MTBE)	2.9	2.5	µg/L	1	6/28/2007 4:02:46 PM		
Benzene		ND	1.0	µg/L	1	6/28/2007 4:02:46 PM		
Toluene		ND	1.0	µg/L	1	6/28/2007 4:02:46 PM		
Ethylbenzene		ND	1.0	µg/L	1	6/28/2007 4:02:46 PM		
Xylenes, Total		ND	2.0	µg/L	1	6/28/2007 4:02:46 PM		
Surr: 4-Bron	nofluorobenzene	87.7	70.2-105	%REC	1	6/28/2007 4:02:46 PM		
EPA 6010B: T	OTAL RECOVERABLE M	ETALS				Analyst: CMS		
Barium		0.21	0.020	ma/L	1 ·	7/3/2007 3:18:53 PM		
Chromium	,	0.0095	0.0060	mg/L	1	7/3/2007 3:18:53 PM		
Lead	•	0.016	0.0050	ma/L	1	7/3/2007 3:18:53 PM		

Date: 05-Jul-07

Qualifiers:

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Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

В

Page 8 of 12
CLIENT:	San Juan Refining			C	lient Sample ID:	TP-#13 6/19/2007 10:40:00 AM		
Lab Order:	0706281				Collection Date:			
Project:	River Terrace 2nd Qtr	Qtr 2007-Water			Date Received:	6/20/2007		
Lab ID:	0706281-07				Matrix:	AQU	EOUS	
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD 8	015B: DIESEL RANGE						Analyst: SCC	
Diesel Range Or	ganics (DRO)	ND	1.0		mg/L	1	6/21/2007 7:30:03 PM	
Motor Oil Range	Organics (MRO)	ND	5.0		mg/L	1	6/21/2007 7:30:03 PM	
Surr: DNOP		110	58-140		%REC	1	6/21/2007 7:30:03 PM	
EPA METHOD 8	015B: GASOLINE RAN	GE	·				Analyst: <b>NSB</b>	
Gasoline Range	Organics (GRO)	ND	0.050		mg/L	1	6/27/2007 9:27:55 PM	
Surr: BFB		94.7	79.2-121		%REC	1	6/27/2007 9:27:55 PM	
EPA METHOD 8	021B: VOLATILES						Analyst: <b>NSB</b>	
Methyl tert-butyl	ether (MTBE)	ND	2.5		µg/L	1	6/27/2007 9:27:55 PM	
Benzene	·	ND	1.0		μg/L	1	6/27/2007 9:27:55 PM	
Toluene		ND	1.0		µg/L	1	6/27/2007 9:27:55 PM	
Ethylbenzene		ND	1.0		µg/L	1	6/27/2007 9:27:55 PM	
Xylenes, Total		ND	2.0		µg/L	1	6/27/2007 9:27:55 PM	
Surr: 4-Bromo	ofluorobenzene	86.6	70.2-105		%REC	1	6/27/2007 9:27:55 PM	
EPA 6010B: TO	TAL RECOVERABLE M	ETALS					Analyst: CMS	
Barium		0.42	0.020		mg/L	1	7/3/2007 3:16:25 PM	
Chromium		0.019	0.0060		mg/L	1	7/3/2007 3:16:25 PM	
Lead		0.011	0.0050		mg/L	1	7/3/2007 3:16:25 PM	

Date: 05-Jul-07

Qualifiers:

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Value exceeds Maximum Contaminant Level Value above quantitation range

E Value above quantitation rangeJ Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- ${\rm H}^-$  . Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

RL Reporting Limit

Page 7 of 12

CLIENT:	San Juan Refining			<b>Client Sample ID:</b>	TP-#2		
Lab Order:	0706281			<b>Collection Date:</b>	6/18/2007 2:20:00 PM		
Project:	River Terrace 2nd Qtr	2007-Water		Date Received:			
Lab ID:	0706281-06		Matrix:	AQUE	OUS		
Analyses	·····	Result	PQL Qu	al Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE	· · · ·				Analyst: SCC	
Diesel Range C	Organics (DRO)	ND	1.0	mg/L	1	6/21/2007 6:55:03 PM	
Motor Oil Range	e Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 6:55:03 PM	
Surr: DNOP	Х 	112	58-140	%REC	<b>1</b> No st	6/21/2007 6:55:03 PM	
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB	
Gasoline Range	e Organics (GRO)	47	5.0	mg/L	100	6/28/2007 4:40:49 AM	
Surr: BFB		106	79.2-121	%REC	100	6/28/2007 4:40:49 AM	
EPA METHOD	8021B: VOLATILES					Analyst: NSB	
Methyl tert-buty	/i ether (MTBE)	ND	250	µg/L	100	6/28/2007 4:40:49 AM	
Benzene		1400	100	µg/L	100 '	6/28/2007 4:40:49 AM	
Toluene		320	100	µg/L	100	6/28/2007 4:40:49 AM	
Ethylbenzene -		3800	100	µg/L	100	6/28/2007 4:40:49 AM	
Xylenes, Total		15000	200	µg/L	100	6/28/2007 4:40:49 AM	
Surr: 4-Brom	ofluorobenzene	100	70.2-105	%REC	100	6/28/2007 4:40:49 AM	
EPA 6010B: T	OTAL RECOVERABLE M	ETALS				Analyst: CMS	
Barium		0.29	0.020	mg/L	1	7/3/2007 3:13:55 PM	
Chromium		ND	0.0060	mg/L	1	7/3/2007 3:13:55 PM	
Lead	34	0.067	0.0050	mg/L	1	7/3/2007 3:13:55 PM	

Date: 05-Jul-07

Qualifiers:	*	Value exceeds Maximum Contaminant Level	В	Analyte detected in the associated Method Blank
	E	Value above quantitation range	Н	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MGL	Maximum Contaminant Level

RL Reporting Limit

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

6/16



CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706281 River Terrace 2nd Qtr 0706281-05	San Juan Refining 0706281 River Terrace 2nd Qtr 2007-Water 0706281-05			Client Sample ID: Collection Date: Date Received: Matrix:		TP-#5 6/18/2007 1:50:00 PM 6/20/2007 AQUEOUS		
Analyses		Result	PQL (	Qual Units		DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC		
Diesel Range C	)rganics (DRO)	ND	1.0	mg/L	,	1	6/21/2007 6:20:05 PM		
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L		1	6/21/2007 6:20:05 PM		
Surr: DNOP		110	58-140	%REC		1	6/21/2007 6:20:05 PM		
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB		
Gasoline Range	e Organics (GRO)	78	5.0	mg/L		100	6/28/2007 3:05:44 AM		
Surr: BFB		112	79.2-121	%REC		100	6/28/2007 3:05:44 AM		
EPA METHOD	8021B: VOLATILES						Analyst: NSB		
Methyl tert-buty	/I ether (MTBE)	ND	250	µg/L		100	6/28/2007 3:05:44 AM		
Benzene		340	100	µg/L		100	6/28/2007 3:05:44 AM		
Toluene		ND	100	µg/L		100	6/28/2007 3:05:44 AM		
Ethylbenzene		3500	100	µg/L	•	100	6/28/2007 3:05:44 AM		
Xylenes, Total		21000	1000	µg/L		500	6/28/2007 3:32:47 PM		
Surr: 4-Brom	ofluorobenzene	90.3	70.2-105	%REC		500	6/28/2007 3:32:47 PM		
EPA 6010B: T	OTAL RECOVERABLE M	ETALS	•				Analyst: CMS		
Barium		0.21	0.020-	ma/L		1	7/3/2007 3:11:28 PM		
Chromium		ND	0.0060	ma/L		1	7/3/2007 3:11:28 PM		
Lead		0.092	0.0050	mg/L		1	7/3/2007 3:11:28 PM		

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Date: 05-Jul-07

Qualifiers: Value exceeds Maximum Contaminant Level В Analyte detected in the associated Method Blank E Value above quantitation range Н Holding times for preparation or analysis exceeded Analyte detected below quantitation limits J MCL Maximum Contaminant Level ND Not Detected at the Reporting Limit

Spike recovery outside accepted recovery limits

RL Reporting Limit

Page 5 of 12

5/16

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706281 River Terrace 2nd Qtr 0706281-04	2007-Water		Cli (	ient Sample ID: Collection Date: Date Received: Matrix:	TP-#6 6/18/2007 1:30:00 PM 6/20/2007 AQUEOUS	
Analyses	· · · · · · · · · · · · · · · · · · ·	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC
Diesel Range (	Drganics (DRO)	ND	1.0		mg/L	1	6/21/2007 5:44:45 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L	1	6/21/2007 5:44:45 PM
Surr: DNOP		110	58-140		%REC	1	6/21/2007 5:44:45 PM
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB
Gasoline Rang	e Organics (GRO)	0.11	0.050		mg/L	1	6/28/2007 2:33:13 AM
Surr: BFB	·	99.9	79.2-121		%REC	1	6/28/2007 2:33:13 AM
EPA METHOD	8021B: VOLATILES				н. Т		Analyst: <b>NSB</b>
Methyl tert-but	yl ether (MTBE)	ND	2.5		µg/L	1	6/28/2007 2:33:13 AM
Benzene		ND	1.0		µg/L	1	6/28/2007 2:33:13 AM
Toluene		ND	- 1.0		μg/L	1	6/28/2007 2:33:13 AM
Ethylbenzene		ND	1.0		µg/L	1	6/28/2007 2:33:13 AM
Xylenes, Total		ND	2.0		µg/L	1	6/28/2007 2:33:13 AM
Surr: 4-Bron	nofluorobenzene	93.0	70.2-105		%REC	1	6/28/2007 2:33:13 AM
EPA 6010B: T	OTAL RECOVERABLE M	ETALS					Analyst: CMS
Barium		0.38	0.020		mg/L	1	7/3/2007 3:08:54 PM
Chromium		ND	0.0060		mg/L	1	7/3/2007 3:08:54 PM
Lead		0.027	0.0050		mall	1	7/3/2007 3:08:54 PM

Date: 05-Jul-07

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E. Value above quantitation range ł
  - Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
  - 4/16

Page 4 of 12

В

Н

RL

Analyte detected in the associated Method Blank

MCL Maximum Contaminant Level Reporting Limit

Holding times for preparation or analysis exceeded

CLIENT:San Juan RefiningLab Order:0706281Project:River Terrace 2nd QLab ID:0706281-03		r 2007-Water		C	Collection Date: Date Received: Matrix:	TP-#8 6/18/2007 1:00:00 PM 6/20/2007 AQUEOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD 8	015B: DIESEL RANGE		·				Analyst: SCC	
Diesel Range Or	ganics (DRO)	1.2	1.0		mg/L	1	6/21/2007 5:09:29 PM	
Motor Oil Range	Organics (MRO)	ND	5.0		mg/L	1	6/21/2007 5:09:29 PM	
Surr: DNOP		108	58-140		%REC	1	6/21/2007 5:09:29 PM	
EPA METHOD 8	015B: GASOLINE RAN	IGE					Analyst: NSB	
Gasoline Range	Organics (GRO)	35	5.0		mg/L	100	6/28/2007 1:00:26 AM	
Surr: BFB		110	79.2-121		%REC	100	6/28/2007 1:00:26 AM	
EPA METHOD 8	021B: VOLATILES				. ,		Analyst: NSB	
Methyl tert-butyl	ether (MTBE)	ND	25		µg/L	10	6/28/2007 1:33:05 AM	
Benzene		ND	10		µg/L	10	6/28/2007 1:33:05 AM	
Toluene		ND	10		µg/L	10	6/28/2007 1:33:05 AM	
Ethylbenzene		290	10		µg/L	10	6/28/2007 1:33:05 AM	
Xylenes, Total		8600	200		µg/L	100	6/28/2007 1:00:26 AM	
Surr: 4-Bromo	fluorobenzene	102	70.2-105		%REC	100	6/28/2007 1:00:26 AM	
EPA 6010B: TO	TAL RECOVERABLE M	<b>METALS</b>					Analyst: CMS	
Barium		0.44	0.020		mg/L	1	7/3/2007 3:03:57 PM	
Chromium		ND	0.0060		mg/L	1	7/3/2007 3:03:57 PM	
Lead		0.054	0.0050		mg/L	1	7/3/2007 3:03:57 PM	

Date: 05-Jul-07

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

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3/16

Page<sup>3</sup> of 12



Hall Envir	onmental Analysis	<b>Date:</b> 05-Jul-07				
CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0706281 River Terrace 2nd Qtr 2007-Water 0706281-02		C	Client Sample ID: Collection Date: Date Received: Matrix:	TP-#1 6/18/2007 11:15:00 AM 6/20/2007 AQUEOUS	
Analyses	•	Result	PQL Qual	Units	DF	Date Analyzed
EPÁ METHOD	8015B: DIESEL RANGE			×		Analyst: SCC
Diesel Range (	Organics (DRO)	2.1	1.0	mg/L	1	6/21/2007 4:34:18 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	6/21/2007 4:34:18 PM
Surr: DNOP	·	106	58-140	%REC	1	6/21/2007 4:34:18 PM
EPA METHOD	8015B: GASOLINE RANG	E				Analyst: NSB
Gasoline Rang	e Organics (GRO)	70	5.0	mg/L	100	6/27/2007 8:27:50 PM
Surr: BFB		113	79.2-121	%REC	100	6/27/2007 8:27:50 PM
EPA METHOD	8021B: VOLATILES			· .	•	Analyst: NSB
Methyl tert-but	yl ether (MTBE)	ND	250	µg/L	100	6/27/2007 8:27:50 PM
Benzene		1900	100	μg/L	100	6/27/2007 8:27:50 PM
Toluene		ND	100	µg/L	100	6/27/2007 8:27:50 PM
Ethylbenzene		4000	100	µg/L	100	6/27/2007 8:27:50 PM
Xylenes, Total		19000	500	µg/L	250	6/27/2007 7:57:50 PM
Surr: 4-Bron	nofluorobenzene	96.0	70.2-105	%REC	250	6/27/2007 7:57:50 PM
EPA 6010B: T	OTAL RECOVERABLE ME	ETALS				Analyst: CMS
Barium		0.14	0.020	mg/L	1	7/3/2007 3:01:30 PM
Chromium		ND	0.0060	mg/L	1	7/3/2007 3:01:30 PM
Lead		0.24	0.0050	mg/L	1	7/3/2007 3:01:30 PM

Qualifiers:

\*

- Value exceeds Maximum Contaminant Level
- Value above quantitation range Е
- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank

- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 2 of 12

2/16

CLIENT:	San Juan Refining			Cli	ient Sample ID:	MW #	449	
Lab Order:	0706281	i		(	Collection Date:	: 6/18/2007 10:25:00 AM : 6/20/2007 : AQUEOUS		
Project:	River Terrace 2nd Qtr	2007-Water			Date Received:			
Lab ID:	0706281-01				Matrix:			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC	
Diesel Range O	rganics (DRO)	ND	1.0		mg/L	1	6/21/2007 3:23:46 PM	
Motor Oil Range	e Organics (MRO)	ND	5.0		mg/L	1	6/21/2007 3:23:46 PM	
Surr: DNOP		112	58-140		%REC	1	6/21/2007 3:23:46 PM	
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB	
Gasoline Range	e Organics (GRO)	ND	0.050		mg/L	1	6/27/2007 7:27:46 PM	
Surr: BFB		94.6	79.2-121		%REC	1	6/27/2007 7:27:46 PM	
EPA METHOD	8021B: VOLATILES						Analyst: NSB	
Methyl tert-buty	l ether (MTBE)	ND	2.5		µg/L	1	6/27/2007 7:27:46 PM	
Benzene		ND	1.0		µg/L	1	6/27/2007 7:27:46 PM	
Toluene		ND	1.0		µg/L	1	6/27/2007 7:27:46 PM	
Ethylbenzene		ND	1.0		µg/L	1	6/27/2007 7:27:46 PM	
Xylenes, Total		ND	2.0		µg/L	1	6/27/2007 7:27:46 PM	
Surr: 4-Brom	ofluorobenzene	86.4	70.2-105		%REC	1	6/27/2007 7:27:46 PM	
EPA 6010B: TO	OTAL RECOVERABLE M	ETALS					Analyst: CMS	
Barium		0.064	0.020		mg/L	1	7/3/2007 2:59:00 PM	
Chromium		ND	0.0060		mg/L	1	7/3/2007 2:59:00 PM	
Lead		ND	0.0050		mg/L	1	7/3/2007 2:59:00 PM	

Date: 05-Jul-07

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

- j Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level RL Reporting Limit

1/16



#### COVER LETTER

Thursday, July 05, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX: (505) 632-3911

RE: River Terrace 2nd Qtr 2007-Water

Order No.: 0706281

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 12 sample(s) on 6/20/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com



				4
Hall Environmental Analysis Laboratory, I	nc.			
د جناب کار	ample Receipt C	Checklist		•
Client Name SJR		Date and Ti	me Received:	6/21/2
Work Order Number 0706320	. · ·	Received	by TLS	
Checklist completed by	Da	lo[2]]	67	
Matrix Carrier	name <u>UPS</u> .			
Shipping container/cooler in good condition?	Yes 🗹	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🔽	No	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes 🗍	No 🔽	N/A	
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		
Water - VOA vials have zero headspace? No VOA vi	als submitted	Yes 🗹	No 🗌	
Water - Preservation labels on bottle and cap match?	Yes 🔽	No	N/A	
Water - pH acceptable upon receipt?	Yes 🔽	No 🗌	N/A	
Container/Temp Blank temperature?	6°	4° C ± 2 Acc	eptable	
COMMENTS:		It given suffic	ent time to cool.	
		· · · · · · · · · · · · · · · · · · ·		
Client contacted Date contact	ted:		Person contacted	
Contacted by: Regarding				
Comments:				
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Corrective Action				
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# QA/QC SUMMARY REPORT

Client: San Juan Project: River Ter	Refining Tace 2nd Qtr 2	007-Water					Work	<b>x Order:</b> 0706320
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RF	PDLimit Qual
Method: SW8015								
Sample ID: MB-13262		MBLK			Batch II	D: <b>13262</b>	Analysis Date:	6/27/2007 1:10:07 PM
Diesel Range Organics (DRO)	~ ND	mg/L	1.0					
Motor Oil Range Organics (MRC	D) ND	-*,mĝ/L	5.0					
Sample ID: LCS-13262		LCS			Batch II	D: 13262	Analysis Date:	6/27/2007 1:45:10 PM
Diesel Range Organics (DRO) Sample ID: LCSD-13262	5.722	mg/L LCSD	1.0	114	74 Batch II	157 D: <b>13262</b>	Analysis Date:	6/27/2007 2:20:34 PM
Diesel Range Organics (DRO)	5.745	mg/L	1.0	115	74	157	0.392	23
Mathad: SM001E				•• ••				
Sample ID: 5ML REAGENT R	1.0	MRIK			· Rotch II	- D2/109	Analysis Data:	6/20/2007 6-50-05 PM
Sample ID. SINE REAGENT B		MDLA	0.070		Daton I	D. KZ4190	Analysis Date.	0/30/2007 0.39.03 F M
Gasoline Range Organics (GRC	)) ND	mg/L	0.050			D D04400		0/00/0007 // // 00 DN
Sample ID: 2.50G GRO LCS		LUS			Batch I	D: R24198	Analysis Date:	6/30/2007 11:14:32 PM
Gasoline Range Organics (GRC	0) 0.5044	mg/L	0.050	101	80	115		
Method: SW8021								
Sample ID: 5ML REAGENT B	LA	MBLK			Batch I	D: <b>R24198</b>	Analysis Date:	6/30/2007 6:59:05 PM
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5					
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µq/L	2.0					
Sample ID: 100NG BTEX LC	5	LCS			Batch I	D: R24198	Analysis Date:	6/30/2007 11:44:25 P
Methyl tert-butyl ether (MTBE)	18 69	uo/I	2.5	93.5	51.2	138	· ·	
Benzene	19.42	ua/L	1.0	97.1	85.9	113		
Toluene	19.80	uo/l	1.0	99.0	86.4	113		
Ethylbenzene	20.03	ug/i	1.0	100	83.5	118		
Xylenes, Total	59.67	р <u>э</u> , с µg/L	2.0	99.4	83.4	122		
			****					
Method: SW/4/0		MDLV			Datab I	D: 43295	Analusia Data	0/00/0007 0.57.40 DM
Sample ID: MIB-15265		WDLN			Datch I	D. 13283	Analysis Date:	6/28/2007 8:57:40 PW
Mercury	ND	mg/L	0.00020					
Sample ID: LCS-13285		LCS			Batch I	D: 13285	Analysis Date:	6/28/2007 8:59:24 PM
Mercury	0.004858	mg/L	0.00020	97.2	80	120	4 N.	
Method: SW6010A						1		
Sample ID: MB-13241		MBLK			Batch I	D: 13241	Analysis Date:	7/3/2007 2:42:57 PM
Barium	ND	ma/L	0.020					
Chromium	ND	ma/L	0.0060					
Lead	ND	ma/L	0.0050					
Sample ID: LCS-13241		LCS			Batch I	D: 13241	Analysis Date:	7/3/2007 2:36:54 PM
Barium	0 5090	ma/l	0.020	102	80	120	· <b>,</b> · · ·	
Chromium	0.5194	ma/L	0.0060	104	80	120		
Lead	0.5088	ma/l	0.0050	102	80	120		· .
	2.2000	<u></u>						
Qualifiers:		· · · · · · · · · · · · · · · · · · ·					· · · ·	
'E Value above quantitation	range		Н	Holding	times for prepa	ration or analy	sis exceeded	
J Analyte detected below q	uantitation limits		ND	Not Det	ected at the Rep	orting Limit		- · · ·
R RPD outside accepted rec	overy limits		S	Spike re	covery outside	accepted recov	ery limits	Page 1
				3/4				

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CLIENT:	San Juan Refining			Client Sample ID	: DW #1	
Lab Order:	0706320			Collection Date:	6/20/20	007 8:45:00 AM
Project:	River Terrace 2nd Qtr	2007-Water		Date Received	6/21/20	007
Lab ID: 0706320-02				Matrix	AQUE	OUS
Analyses	н. н. А	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8	015B: DIESEL RANGE				······	Analyst: SCC
Diesel Range Or	ganics (DRO)	ND	1.0	mg/L	1	6/27/2007 5:17:03 PM
Motor Oil Range	Organics (MRO)	ND	5.0	mg/L	1	6/27/2007 5:17:03 PM
Surr: DNOP		116	58-140	%REC	1	6/27/2007 5:17:03 PM
EPA METHOD 8	3015B: GASOLINE RANG	GE				Analyst: NSB
Gasoline Range	Organics (GRO)	0.15	0.050	mg/L	1	7/1/2007 3:17:17 AM
Surr: BFB		107	79.2-121	%REC	1	7/1/2007 3:17:17 AM
EPA METHOD 8	3021B: VOLATILES					Analyst: NSB
Methyl tert-butyl	ether (MTBE)	ND	2.5	µg/L	1	7/1/2007 3:17:17 AM
Benzene		ND	1.0	µg/L	1	7/1/2007 3:17:17 AM
Toluene		ND	1.0	µg/L	1	7/1/2007 3:17:17 AM
Ethylbenzene	,	ND	1.0	µg/L	1	7/1/2007 3:17:17 AM
Xylenes, Total		2.6	2.0	hð\r	. 1	7/1/2007 3:17:17 AM
Surr: 4-Brome	ofluorobenzene	91.9	70.2-105	%REC	1	7/1/2007 3:17:17 AM
EPA METHOD	7470: MERCURY					Analyst: IC
Mercury		ND	0.00020	mg/L	1	6/28/2007 9:42:30 PM
EPA 6010B: TC	TAL RECOVERABLE M	ETALS				Analyst: CMS
Barium		0.93	0.10	ma/L	1	7/3/2007 3:47:56 PM
Chromium		ND	0.030	ma/L	1	7/3/2007 3:47:56 PM
Lead		ND	0.025	mg/L	1	7/3/2007 3:47:56 PM

Date: 05-Jul-07

E Value above quantitation rangeJ Analyte detected below quantitation limitsND Not Detected at the Reporting Limit

Qu'alifiers:

\*

S Spike recovery outside accepted recovery limits

Value exceeds Maximum Contaminant Level

- B = Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

2/4



CLIENT:	San Juan Refining			Ċ	Client Sample ID:	TP #7		
Lab Order:	0706320				<b>Collection Date:</b>	6/20/2007 8:20:00 AM		
Project:	River Terrace 2nd Qtr	2007-Water			Date Received:	6/21/2	2007	
Lab ID:	0706320-01				Matrix:	AQUEOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed	
EPA METHOD	8015B: DIESEL RANGE					***	Analyst: SCC	
Diesel Range (	Organics (DRO)	ND	1.0		mg/L	1	6/27/2007 4:41:42 PM	
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L	1	6/27/2007 4:41:42 PM	
Surr: DNOP		109	58-140		%REC	1	6/27/2007 4:41:42 PM	
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB	
Gasoline Rang	e Organics (GRO)	0.052	0.050		mg/L	1	7/1/2007 2:47:15 AM	
Surr: BFB		106	79.2-121		%REC	1	7/1/2007 2:47:15 AM	
EPA METHOD	8021B: VOLATILES						Analyst: NSB	
Methyl tert-but	yl ether (MTBE)	ND	2.5		µg/L	1	7/1/2007 2:47:15 AM	
Benzene		ND	1.0		µg/L	1	7/1/2007 2:47:15 AM	
Toluene		ND	1.0		µg/L	1	7/1/2007 2:47:15 AM	
Ethylbenzene		ND	1.0		µg/L	1	7/1/2007 2:47:15 AM	
Xylenes, Total		ND	2.0		µg/L	1	7/1/2007 2:47:15 AM	
Surr: 4-Bron	nofluorobenzene	89.6	70.2-105		%REC	1	7/1/2007 2:47:15 AM	
EPA 6010B: T	OTAL RECOVERABLE M	ETALS					Analyst: CMS	
Barium		0.075	0.020		mg/L	1	7/3/2007 3:43:49 PM	
Chromium		ND	0.0060		mg/L	1	7/3/2007 3:43:49 PM	
Lead		ND	0.0050		mg/L	1	7/3/2007 3:43:49 PM	
- <b>x</b> - <b>x</b>								

Date: 05-Jul-07

B Analyte detected in the associated Method Blank

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 2

1/4

 Qualifiers:
 \*
 Value exceeds Maximum Contaminant Level

 E
 Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- - U



#### COVER LETTER

Thursday, July 05, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace 2nd Qtr 2007-Water

Dear Cindy Hurtado:

Order No.: 0706320

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 6/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com **۴** .

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, v		HALL ENVIRONMENTAL ANALYSIS LABORATORY	4901 Hawkins NE, Suite D Alhinging Alaw Maxing 87109	Tel. 505.345.3975 Fax 505.345.4107				( <sup>0L</sup> N) 385) (285)	() 909 ()	6992b ,, , , , , , , , , , , , , , , , , ,	A or P etals (Cl, NO (Cl, NO (Cl, NO (Cl, NO (Cl) (Cl) (Cl) (Cl) (Cl) (Cl) (Cl) (Cl)	9/100/16 9/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/10/16 1/	EDC Anior 808 808 8260 8260 8280 8280 8280 8280 8						×						,
	QA / QC Package:	Std 🗖 Level 4	Other:	Project Name:	Kiter Perace / Rite-2007	Project #:	ıjA)	Project Manager:	10 (10 profeed of 10 profeed o	With Who. Bu Kickow F F F B 2 1	Sample/Temperature: / * * * * * * * * * * * * * * * * * *	Preservative		4.10A V V V	<b>2</b>	)		4-10A - S 2 1	1-350 L S	4-104-1- 6 1 1+	0 1 (25E)			Received By: (Signature) つくつき して Remarks:	
		Beddie versie	Chain-UP-CUSTOUY Recurd	Client: SAN JIAN KORME		Address: #57 R/ 4/990	Blown Fold NM	89413		Phone #: 575-632.416/	Fax#: <0<-1032-39/1		Date lime Matrix Sample I.U. No.	2.27 90A NOU TO 13	1 940 / TP-11	1005 1 70-3	112 12-10	1/250 / MW #49		145m 1 1 4				Date: Time: Relignation By: (Signature) NATD 735 mm CWW SIGnature)	חממני האליומיניין האווווני. המווווני האווווני האווווני האווווני האווווני האוווני האוווני האוווני האוווני האוווני האוווני האוווני האוווני ה

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	Sample	e Receipt Ch	necklist		
Client Name SJR			Date and Time	Received:	2/28/2007
Work Order Number 0702368			Received by	TLS	
Checklist completed by Signafure	· · ·	Jeb a Date	08,67		
Matrix	Carrier name	UPS			
Shipping container/cooler in good condition?		Yes 🗹	No 🗔	Not Present	
Custody seals intact on shipping container/cooler?		Yes 🗹	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?		Yes 🗌	No 🗌	N/A	
Chain of custody present?		Yes 🗹	No 🗌		
Chain of custody signed when relinquished and rec	ceived?	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 🗔		
Water - VOA vials have zero headspace?	No VOA vials sub	mitted	Yes 🗹	No 🗌	
Water - Preservation labels on bottle and cap mate	:h?	Yes 🗹	No 🗌	N/A 🗍	
Water - pH acceptable upon receipt?		Yes 🗹	No 🗌	N/A 🗌	
Container/Temp Blank temperature?		<b>3</b> °	4° C ± 2 Accepta	able	
COMMENTS:			If given sufficien	t time to cool.	
	· · · · · · · · · · · · · · · · · · ·				 
Client contacted D	ate contacted:		Pers	son contacted	
Contacted by: F	legarding				 
Comments:					
					 ·····
					 · · · · · · · · · · · · · · · · · · ·
	· · · · · · · · · · · · · · · · · · ·				 
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### **QA/QC SUMMARY REPORT**

Project:	San Juan R River Terra	erining ace - 1st Quar	rter 2007					Work	<b>Order:</b> 0702368
Analyte		Result	Units	PQL	%Rec	LowLimit H	lighLimit	%RPD RPE	DLimit Qual
Method: SW601 Sample ID: MB-1	0A 2415		MBLK	<u> </u>		Batch ID:	12415	Analysis Date:	3/7/2007 11:09:22 AM
Chromium		ND	mg/L	0.0060					
Lead		ND	mg/L .	0.0050					
Sample ID: LCS-	12415		LCS			Batch ID:	12415	Analysis Date:	3/7/2007 11:10:57 AM
Chromium		0.5043	mg/L	0.0060	101	80	120		
Lead		0.4878	mg/L	0.0050	97.6	80	120		

#### Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

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recovery outside accepted recovery limits 8/9

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### **QA/QC SUMMARY REPORT**

Client:San Juan ReiProject:River Terrac	fining e - 1st Quart	er 2007					Work O	rder: 0702368
Analyte	Result	Units	PQL	%Rec	LowLimit H	lighLimit	%RPD RPDL	imit Qual
Method: SW8015								······································
Sample ID: MB-12410		MBLK			Batch ID	: 12410	Analysis Date:	3/1/2007 1:58:25 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0					•
Motor Oil Range Organics (MRO)	ND	mg/L	5.0					
Sample ID: LCS-12410		LCS			Batch ID	: 12410	Analysis Date:	3/1/2007 2:32:49 PM
Diesel Range Organics (DRO)	5.603	mg/L	1.0	112	74	157		
Sample ID: LCSD-12410		LCSD			Batch ID	: 12410	Analysis Date:	3/1/2007 3:07:09 PM
Diesel Range Organics (DRO)	5.623	mg/L	1.0	112	74	157	0.362 23	
Method: SW8015							,	
Sample ID: 0702368-02A MSD		MSD			Batch ID	: R22664	Analysis Date:	3/2/2007 6:08:04 AM
Gasoline Range Organics (GRO)	0.4970	ma/L	0.050	99.4	80	115	1.17 8.39	
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID	: R22664	Analysis Date:	3/1/2007 7:58:58 AM
Gasoline Range Organics (GRO)	ND	ma/l	0.050					
Sample ID: 2.5UG GRO LCS		LCS	0.000		Batch ID	R22664	Analysis Date:	3/2/2007 6:37:59 AM
	0 5290		0.050	109	200	115	r indigele bater	
Sample ID: 0702368-020 MS	0.5560	MS	0.050	100	ou Batch ID	611 10 10 10	Analysis Data:	3/2/2007 5-38-03 AM
Gasoline Range Organics (GRO)	0 /012	ma/l	0.050	08.2	80	115	Analysis Date.	3/2/2007 5.50.05 FW
Casonne range organics (Orto)	0.4012	myre	0.000					·
Method: SW8021								
Sample ID: RB-II		MBLK			Batch ID	): <b>R22664</b>	Analysis Date:	3/2/2007 2:07:52 A
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5					₿¥.
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
1,2,4-Trimethylbenzene	ND	µg/L	1.0					
1,3,5-I rimethylbenzene	ND	µg/L	1.0		<b>D</b>	500004		0.00000000000000000
Sample ID: 100NG BTEX LCS-II		LCS			Batch IL	): R22664	Analysis Date:	3/2/2007 2:37:53 AM
Methyl tert-butyl ether (MTBE)	19.85	µg/L	2.5	99.2	51.2	138		
Benzene	20.24	µg/L	1.0	101	85.9	113		
Toluene	20.31	µg/L	1.0	102	86.4	113		
Ethylbenzene	20.41	μg/L	1.0	102	83.5	118		
Xylenes, Total	62.18	µg/L	2.0	104	83.4	122		
1,2,4-Trimethylbenzene	20.48	µg/L	1.0	102	83.5	115		
1,3,5-Trimethylbenzene	20.34	µg/L	1.0	102	85.2	113		
Method: SW7470								
Sample ID: LCS-12426		LCS			Batch ID	D: <b>12426</b>	Analysis Date:	3/2/2007
Mercury	0.005014	mg/L	0.00020	100	80	120		

- Qualifiers:
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

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 $7^{\circ}/9^{\circ}$  recovery outside accepted recovery limits

Hall	Envir	onmental	Anal	ysis 🛛	Labor	·atory, ]	Inc.

Date: 08-Mar-07

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Analyst: SCC

Analyst: NSB

NSB

CMS

NMO

3/7/2007 11:16:40 AM

3/1/2007 8:15:35 PM

3/2/2007 4:08:00 AM

3/2/2007 4:08:00 AM

CLIENT:	San Juan Refining		(	Client Sample ID	: DW #	DW #1		
Lab Order:	0702368			<b>Collection Date</b>	: 2/27/2	2007 1:45:00 PM		
Project:	Project: River Terrace - 1st Quart		<b>Date R</b>		: 2/28/2	2007		
Lab ID:	0702368-06			Matrix:		AQUEOUS		
Analyses	·	Result	PQL Qua	l Units	DF	Date Analyzed		
EPA METHOD 8	015B: DIESEL RANG	E				Analyst: SC		
Diesel Range Org	ganics (DRO)	ND	1.0	mg/L	1	3/1/2007 8:15:35 PM		
Motor Oil Range	Organics (MRO)	ND	5.0	mg/L	1	3/1/2007 8:15:35 PM		

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EPA METHOD 8015B: GASOLINE RAI	NGE	
Gasoline Range Organics (GRO)	0.29	0.050
Surr: BFB	114	79.2-121
EPA METHOD 8021B: VOLATILES		

EPA METHOD 8021B: VOLATILES					Analyst: NSE
Methyl tert-butyl ether (MTBE)	ND	2.5	µg/L	1	3/2/2007 4:08:00 AM
Benzene	ND	1.0	µg/L	1	3/2/2007 4:08:00 AM
Toluene	ND	1.0	µg/L	1	3/2/2007 4:08:00 AM
Ethylbenzene	ND	1.0	µg/L	1	3/2/2007 4:08:00 AM
Xylenes, Total	8.3	2.0	µg/L	1	3/2/2007 4:08:00 AM
1,2,4-Trimethylbenzene	52	1.0	µg/L	1	3/2/2007 4:08:00 AM
1,3,5-Trimethylbenzene	ND	1.0	µg/L	1	3/2/2007 4:08:00 AM
Surr: 4-Bromofluorobenzene	93.2	70.2-105	%REC	1	3/2/2007 4:08:00 AM
EPA METHOD 7470: MERCURY					Analyst: CM
Mercury	0.0015	0.00020	mg/L	1	3/2/2007
EPA 6010B: TOTAL RECOVERABLE	METALS				Analyst: NM
Chromium	ND	0.0060	mg/L	1	3/7/2007 11:16:40 AM

0.0050

58-140

%REC

mg/L

%REC

mg/L

Lead	ND



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Surr: DNOP

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
  - Spike recovery outside accepted recovery limits 6'/9
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- Reporting Limit RL

CLIENT:San Juan RefiningLab Order:0702368				Client Sample	<b>D:</b> MW #	#49			
Lab Order:	0702368			Collection Da	te: 2/27/2	2/27/2007 12:50:00 PM			
Project:	River Terrace - 1st Qu	arter 2007		Date Receive	ed: 2/28/2	2007			
Lab ID:	0702368-05			Matr	ix: AQUI	AQUEOUS			
Analyses		Result	PQL	Qual Units	DF	Date Analyzed			
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC			
Diesel Range (	Drganics (DRO)	ND	1.0	mg/L	1	3/1/2007 7:41:31 PM			
Motor Oil Rang	je Organics (MRO)	ND	5.0	mg/L	1	3/1/2007 7:41:31 PM			
Surr: DNOP		109	58-140	%REC	1	3/1/2007 7:41:31 PM			
EPA METHOD	8015B: GASOLINE RANG	GE				Analyst: NSB			
Gasoline Rang	e Organics (GRO)	0.054	0.050	mg/L	1	3/2/2007 1:37:54 AM			
Surr: BFB		113	79.2-121	%REC	1	3/2/2007 1:37:54 AM			
EPA METHOD	8021B: VOLATILES					Analyst: NSB			
Methyl tert-but	yl ether (MTBE)	ND	2.5	µg/L	1	3/2/2007 1:37:54 AM			
Benzene		ND	<b>1</b> .0	µg/L	1	3/2/2007 1:37:54 AM			
Toluene		ND	1.0	µg/L	1	3/2/2007 1:37:54 AM			
Ethylbenzene		ND	1.0	µg/L	1	3/2/2007 1:37:54 AM			
Xylenes, Total		ND	2.0	µg/L	1	3/2/2007 1:37:54 AM			
1,2,4-Trimethy	Ibenzene	ND	1.0	µg/L	1	3/2/2007 1:37:54 AM			
1,3,5-Trimethy	lbenzene	ND	1.0	µg/L	1	3/2/2007 1:37:54 AM			
Surr: 4-Bror	nofluorobenzene	91.6	70.2-105	%REC	1	3/2/2007 1:37:54 AM			
EPA 6010B: T	OTAL RECOVERABLE M	ETALS				Analyst: NMO			
Chromium		ND	0.0060	mg/L	. 1	3/7/2007 11:14:58 AM			
Lead <sup>4</sup>		ND	0.0050	mg/L	1	3/7/2007 11:14:58 AM			

Date: 08-Mar-07

Qualifiers:

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Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
- S
  - Spike recovery outside accepted recovery limits 5/9
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 5 of 6



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CLIENT:	San Juan Refining			Cli	ent Sample ID:	TP-10	· · · · · · · · · · · · · · · · · · ·		
Lab Order:	0702368			(	<b>Collection Date:</b>	2/27/2	2007 10:35:00 AM		
Project:	River Terrace - 1st Qua	rter 2007			Date Received:	2/28/2	2007		
Lab ID:	0702368-04				Matrix:	AQUEOUS			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC		
Diesel Range O	rganics (DRO)	ND	1.0		mg/L	1	3/1/2007 6:33:18 PM		
Motor Oil Range	ND	5.0		mg/L	1	3/1/2007 6:33:18 PM			
Surr: DNOP		112	58-140		%REC	1	3/1/2007 6:33:18 PM		
EPA METHOD	8015B: GASOLINE RANG	E					Analyst: NSB		
Gasoline Range	e Organics (GRO)	ND	0.050		mg/L	1	3/2/2007 1:07:48 AM		
Surr: BFB		111	79.2-121		%REC	1	3/2/2007 1:07:48 AM		
EPA METHOD	8021B: VOLATILES	·					Analyst: NSB		
Methyl tert-buty	/I ether (MTBE)	ND	2.5		µg/L	1	3/2/2007 1:07:48 AM		
Benzene		ND	1.0		µg/L	1	3/2/2007 1:07:48 AM		
Toluene		ND	1.0		µg/L	1	3/2/2007 1:07:48 AM		
Ethylbenzene		ND	1.0		µg/L	1	3/2/2007 1:07:48 AM		
Xylenes, Total		ND	2.0		µg/L	1	3/2/2007 1:07:48 AM		
1,2,4-Trimethyl	benzene	ND	1.0		µg/L	1	3/2/2007 1:07:48 AM		
1,3,5-Trimethyl	benzene	ND	1.0		µg/L	1	3/2/2007 1:07:48 AM		
Surr: 4-Brom	ofluorobenzene	92.2	70.2-105	~	%REC	1	3/2/2007 1:07:48 AM		

Date: 08-Mar-07

Qualifiers:

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits ND Not Detected at the Reporting Limit
- ND Not Detected S Spike recover

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- Spike recovery outside accepted recovery limits 4/9
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

CLIENT:	San Juan Refining	•		Clie	ent Sample ID:	TP-3			
Lab Order:	0702368			C	ollection Date:	2/27/2	2007 10:05:00 AM		
Project:	River Terrace - 1st Qua	rter 2007		J	Date Received:	2/28/2	2007		
Lab ID:	0702368-03				Matrix:	AQUEOUS			
Analyses		Result	PQL	Qual U	Jnits	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE				····		Analyst: SCC		
Diesel Range O	rganics (DRO)	ND	1.0	m	ng/L	1	3/1/2007 5:59:14 PM		
Motor Oil Range	e Organics (MRO)	ND	5.0	. m	ng/L	1	3/1/2007 5:59:14 PM		
Surr: DNOP		102	58-140	%	%REC	1	3/1/2007 5:59:14 PM		
EPA METHOD	8015B: GASOLINE RANG	E					Analyst: NSB		
Gasoline Range	Organics (GRO)	ND	0.050	n	ng/L	1	3/2/2007 12:37:57 AM		
Surr: BFB		113	79.2-121	%	%REC	1	3/2/2007 12:37:57 AM		
EPA METHOD	8021B: VOLATILES						Analyst: NSB		
Methyl tert-buty	l ether (MTBE)	ND	2.5	μ	ıg/L	1	3/2/2007 12:37:57 AM		
Benzene		ND	1.0	μ	ıg/L	1	3/2/2007 12:37:57 AM		
Toluene		ND	1.0	ц	Jg/L	1	3/2/2007 12:37:57 AM		
Ethylbenzene		ND	1.0	ц	ıg/L	1	3/2/2007 12:37:57 AM		
Xylenes, Total		ND	2.0	μ	ıg/L	1	3/2/2007 12:37:57 AM		
1,2,4-Trimethyll	penzene	ND	1.0	μ	ug/L	1	3/2/2007 12:37:57 AM		
1,3,5-Trimethyll	penzene	ND	1.0	ц	ıg/L	1	3/2/2007 12:37:57 AM		
Surr: 4-Brom	ofluorobenzene	94.8	70.2-105	9	%REC	1	3/2/2007 12:37:57 AM		

Value exceeds Maximum Contaminant Level Qualifiers: \* В Е Value above quantitation range Н J Analyte detected below quantitation limits MCL Maximum Contaminant Level Not Detected at the Reporting Limit ND RL Reporting Limit

Spike recovery outside accepted recovery limits

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3/9

Analyte detected in the associated Method Blank

Date: 08-Mar-07

- Holding times for preparation or analysis exceeded



CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0702368 River Terrace - 1st 0702368-02	Quarter 20	)7	Client Coll Dav	Sample ID: ection Date: te Received: Matrix:	TP-11 2/27/2 2/28/2 AQUE	TP-11 2/27/2007 9:40:00 AM 2/28/2007 AQUEOUS			
Analyses		Res	lt PQ	L Qual Uni	ts	DF	Date Analyzed			
EPA METHOD 80	15B: DIESEL RANG	GE	······································				Analyst: SCC			
Diesel Range Org	anics (DRO)	1	ID 1	.0 mg/l	-	1	3/1/2007 5:24:47 PM			
Motor Oil Range (	Organics (MRO)	. I	۱D 5	.0 <b>mg/l</b>	L	1	3/1/2007 5:24:47 PM			
Surr: DNOP		1	16 58-14	0 %R	EC	1	3/1/2007 5:24:47 PM			
EPA METHOD 80	015B: GASOLINE RA	ANGE					Analyst: <b>NSB</b>			
Gasoline Range (	Organics (GRO)		D 0.0	50 mg/l	L	1	3/2/2007 12:07:53 AM			
Surr: BFB		1	11 79.2-12	21 %RI	EC ·	1	3/2/2007 12:07:53 AM			
EPA METHOD 80	021B: VOLATILES		,				Analyst: NSB			
Methyl tert-butyl e	ether (MTBE)		ND 2	.5 µg/L	-	1	3/2/2007 12:07:53 AM			
Benzene			ND 1	.0 μg/L	_	1	3/2/2007 12:07:53 AM			
Toluene			ND 1	.0 μg/L	_	1	3/2/2007 12:07:53 AM			
Ethylbenzene			ND 1	.0 µg/L	-	1	-3/2/2007 12:07:53 AM			
Xylenes, Total			ND 2	.0 µg/L		1	3/2/2007 12:07:53 AM			
1,2,4-Trimethylbe	enzene		ND 1	.0 µg/L	_	1	3/2/2007 12:07:53 AM			
1,3,5-Trimethylbe	enzene		ND 1	.0 µa/L	_	1	3/2/2007 12:07:53 AM			
Surr: 4-Bromot	luorobenzene	9	2.2 70.2-1	05 %R	EC	1	3/2/2007 12:07:53 AM			

Date: 08-Mar-07

Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit S Spike recovery outside accepted reco
  - Spike recovery outside accepted recovery limits 2 / 9
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 2 of 6

CLIENT:	San Juan Refining			С	lient Sample ID:	TP-13	, ,
Lab Order:	0702368				<b>Collection Date:</b>	2/27/2	2007 9:10:00 AM
Project:	River Terrace - 1st Qua	arter 2007			Date Received:	2/28/2	2007
Lab ID:	0702368-01				Matrix:	AQUI	EOUS
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	3015B: DIESEL RANGE						Analyst: SCC
Diesel Range O	rganics (DRO)	ND	1.0		mg/L	1	3/1/2007 4:50:22 PM
Motor Oil Range	e Organics (MRO)	ND	5.0		mg/L	1	3/1/2007 4:50:22 PM
Surr: DNOP		116	58-140		%REC	1	3/1/2007 4:50:22 PM
EPA METHOD	8015B: GASOLINE RANG	θE					Analyst: NSB
Gasoline Range	Organics (GRO)	ND	0.050		mg/L	1	3/1/2007 11:37:46 PM
Surr: BFB		111	79.2-121		%REC	1	3/1/2007 11:37:46 PM
EPA METHOD	8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl	ether (MTBE)	ND	2.5		µg/L	1	3/1/2007 11:37:46 PM
Benzene		ND	1.0		µg/L	1	3/1/2007 11:37:46 PM
Toluene		ND	1.0		µg/L	1	3/1/2007 11:37:46 PM
Ethylbenzene		ND	1.0		µg/L	1	3/1/2007 11:37:46 PM
Xylenes, Total		ND	2.0		µg/L	1	3/1/2007 11:37:46 PM
1,2,4-Trimethylt	benzene	ND	1.0		µg/L	1	3/1/2007 11:37:46 PM
1,3,5-Trimethylt	penzene	ND	1.0		µg/L	1	3/1/2007 11:37:46 PM
Surr: 4-Brome	ofluorobenzene	92.6	70.2-105		%REC	1	3/1/2007 11:37:46 PM

Date: 08-Mar-07

Qualifiers: \* Value exceeds Maximum Contaminant Level В Analyte detected in the associated Method Blank E Value above quantitation range Н Holding times for preparation or analysis exceeded Analyte detected below quantitation limits J MCL Maximum Contaminant Level ND Not Detected at the Reporting Limit RL Reporting Limit Spike recovery outside accepted recovery limits · S

Page 1 of 6





#### COVER LETTER

Thursday, March 08, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace - 1st Quarter 2007

Dear Cindy Hurtado:

Order No.: 0702368

Hall Environmental Analysis Laboratory, Inc. received 6 sample(s) on 2/28/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D SAlbuquerque, NM 87109 505.345.3975 SFax 505.345.4107 www.hallenvironmental.com

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		CH C	Client.		Addre				Phone	Fax #		Da	3-20												Date: Date: Date:	
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	Sampi	e Receipt On	ecklist		
Client Name SJR	· · · .		Date and Time	Received:	2/27/2007
Nork Order Number 0702319		·	Received by	TLS	
1 0		1			
Shecklist completed by		<u> </u>	707		
Signate & S					
<i>M</i> atrix	Carrier name	UPS			
Shipping container/cooler in good condition?		Yes 🔽		Not Present	
Custody seals intact on shipping container/cool	er?	Yes 🗹	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?		Yes	No 🗌	N/A	
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 🗌		
Water - VOA vials have zero headspace?	No VOA vials su	bmitted	Yes 🗹	No 🗌	
Nater - Preservation labels on bottle and cap n	natch?	Yes	No 🗌	N/A	•
Nater - pH acceptable upon receipt?		Yes	No 🗌	N/A 🗹	
Container/Temp Blank temperature?		4°	4° C ± 2 Accepta	able	
COMMENTS:			If given sufficien	t time to cool.	
		· .			
		- ,			
Client contacted	Date contacted:		Pers	son contacted	
Contacted by:	Regarding				
	ũ ũ <u> </u>				
Comments:					
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Corrective Action	^				
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#### QA/QC SUMMARY REPORT

**Client:** San Juan Refining River Terrace - 1st Quarter 2007 Project: Work Order: 0702319 PQL Analyte Result Units %Rec LowLimit HighLimit %RPD RPDLimit Qual Method: SW8021 Sample ID: 100NG BTEX LCS LCS Analysis Date: R22663 3/1/2007 6:29:17 PM Batch ID: 2.5 Methyl tert-butyl ether (MTBE) 19.97 µg/L 99.8 51.2 138 Benzene 20.54 µg/L 1.0 103 85.9 113 Toluene 20.39 1.0 102 86.4 µg/L 113 Ethylbenzene 20.63 µg/L 1.0 103 83.5 118 Xylenes, Total 63.04 µg/L 2.0 105 83.4 122 Sample ID: 100NG BTEX LCS-II LCS Batch ID: R22664 Analysis Date: 3/2/2007 2:37:53 AM Methyl tert-butyl ether (MTBE) 2.5 19.85 µg/L 99.2 51.2 138 Benzene 20.24 μg/L 1.0 101 85.9 113 Toluene 20.31 µg/L 1.0 102 86.4 113 Ethylbenzene 20.41 µg/L 1.0 102 83.5 118 Xylenes, Total 62.18 µg/L 2.0 104 83.4 122 20.48 1.0 102 -83.5 1,2,4-Trimethylbenzene µg/L 115 1,3,5-Trimethylbenzene 20.34 μg/L 1.0 102 85.2 113 MS Sample ID: 0702319-07A MS 2/28/2007 1:31:29 AM Batch ID: R22620 Analysis Date: µg/L 2.5 97.2 138 Methyl tert-butyl ether (MTBE) 51.2 21.12 Benzene 20.08 µg/L 1.0 100 85.9 113 µg/L 1.0 99.0 86.4 Toluene 19.81 113 Ethylbenzene 19.91 µg/L 1.0 99.6 83.5 118 2.0 99.8 83.4 Xylenes, Total 60.90 µg/L 122

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

10/11

## **QA/QC SUMMARY REPORT**

Client:San JuaProject:River T	n Refining <sup>°</sup> errace - 1st Qua	rter 2007					V	Vork Order: 0702319
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit Qual
Method: SW8021								· · · ·
Sample ID: 0702319-07A M	ISD	MSD			Batch	ID: R22620	Analysis D	ate: 2/28/2007 2:01:31 AM
Methyl tert-butyl ether (MTBE	) 23.45	µg/L	2.5	109	51.2	138	10.4	28
Benzene	22.07	µg/∟	1.0	110	85.9	113	9.47	27
Toluene	22.03	µg/L	1.0	110	86.4	113	10.6	19
Ethylbenzene	22.38	µg/L	1.0	112	83.5	118	11.7	10 R
Xylenes, Total	68.38	µg/∟	2.0	112	83.4	122	11.6	13
Sample ID: 5ML REAGENT	BLA	MBLK			Batch	ID: R22620	Analysis D	ate: 2/27/2007 7:35:36 AM
Methyl tert-butyl ether (MTBE	) ND	µg/L	2.5					
Benzene	ND	µg/L	- 1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	μg/L	1.0					
Xvlenes, Total	ND	ug/L	2.0					
Sample ID: 5ML REAGENT	BLA	MBLK			Batch	ID: R22643	Analysis D	ate: 2/28/2007 11:19:47 AM
Methyl tert-butyl ether (MTRE		uo/l	25				,	
Renzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes Total	ND	µg/L	2.0					
Sample ID: 5MI REAGENI	RIA	· MBIK	2.0		Batch	D. P22663		Anto: 2/1/2007 7:58:58 AM
Sample ID. SMETREADEN		MDER			Dato	ND N22000		ale, 3/1/2007 1.30.36 AM
Methyl tert-butyl ether (MTBE	.) ND	µg/L	2.5					
Benzene	ND	µg/Ľ	1.0					
Toluene	ND	hð\r	1.0					
Ethylbenzene	ND	hð\r	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: RB-II		MBLK			Batch	n ID: R22664	Analysis E	Date: 3/2/2007 2:07:52 AM
Methyl tert-butyl ether (MTBE	E) ND	µg/L	2.5					
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
1,2,4-Trimethylbenzene	ND	µg/L	1.0					
1,3,5-Trimethylbenzene	ND	µg/L	1.0					
Sample ID: 100NG BTEX L	cs	LCS	,		Batch	n ID: R22620	) Analysis D	Date: 2/28/2007 2:31:28 AM
Methyl tert-butyl ether (MTBE	E) 20.25	μg/L	2.5	101	51.2	138		
Benzene	21.06	µg/L	1.0	105	85.9	113		
Toluene	20.87	µg/L	1.0	104	86.4	113		
Ethylbenzene	21.02	μg/L	1.0	105	83.5	118		
Xylenes, Total	64.49	µg/L	2.0	107	83.4	122		
Sample ID: 100NG BTEX L	_CS	LCS			Batch	n ID: R2264:	Analysis E	Date: 3/1/2007 4:25:10 AM
Methyl tert-butyl ether (MTRF	-) 19.44	ug/L	2.5	97 2	512	138	, -	•
Benzene	-, 19.50	но/!	1.0	97.5	85.9	113		
Toluene	20.10	uo/l	1.0	100	86.4	113		
Ethylbenzene	19 74	10/1	1.0	98.7	83.5	118		
Xvlenes Total	60.40	197- 100/1	20	101	83.4	102		
					т. 			
Qualifiers:								

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

9/11

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## **QA/QC SUMMARY REPORT**

Project: San Juan Refr	ining - 1st Quai	rter 2007				Work	<b>Order:</b> 0702319
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RP	DLimit Qual
Method: SW8015 Sample ID: MB-12403		MBLK			Batch ID: 12403	Analysis Date:	2/28/2007 9:05:32 AM
Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Sample ID: LCS-12403	ND ND	mg/L mg/L LCS	1.0 5.0	1	Batch ID: 12403	Analysis Date:	2/28/2007 9:39:57 AM
Diesel Range Organics (DRO) Sample ID: LCSD-12403	5.097	mg/L LCSD	1.0	102	74 157 Batch ID: <b>12403</b>	Analysis Date:	2/28/2007 10:14:36 AM
Diesel Range Organics (DRO)	5.797	mg/L	1.0	116	74 157	12.8	23
Method: SW8015 Sample ID: 0702319-06A MSD		MSD			Batch ID: R22620	Analysis Date:	2/28/2007 8:31:46 AM
Gasoline Range Organics (GRO) Sample ID: 5ML REAGENT BLA	0.5526	mg/L <i>MBLK</i>	0.050	104	80 115 Batch ID: <b>R22620</b>	1.83 8 Analysis Date:	.39 2/27/2007 7:35:36 AM
Gasoline Range Organics (GRO) Sample ID: 5ML REAGENT BLA	ND	mg/L MBLK	0.050		Batch ID: R22643	Analysis Date:	2/28/2007 11:19:47 AM
Gasoline Range Organics (GRO) Sample ID: 5ML REAGENT BLA	ND	mg/L <i>MBLK</i>	0.050		Batch ID: R22664	Analysis Date:	-3/1/2007 7:58:58 AM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	ND	mg/L LCS	0.050		Batch ID: R22620	Analysis Date:	2/28/2007 9:03:38 AM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0.5236	mg/L LCS	0.050	105	80 115 Batch ID: <b>R22643</b>	Analysis Date:	2/28/2007 11:24:49 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0.5418	mg/L LCS	0.050	108	80 115 Batch ID: <b>R22664</b>	Analysis Date:	3/2/2007 6:37:59 AM
Gasoline Range Organics (GRO) Sample ID: 0702319-06A MS	0.5380	mg/L MS	0.050	108	80 115 Batch ID: <b>R22620</b>	Analysis Date:	2/28/2007 7:58:54 AM
Gasoline Range Organics (GRO)	0.5426	mg/L	0.050	102	80 115		

Qualifiers:

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E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

8/11

Hall	Enviro	nmental	Analysis	Labora	tory, Inc.

CLIENT:San Juan RefiningLab Order:0702319Project:River Terrace - 1st Quarter 2007Lab ID:0702319-07

Date: 02-Mar-07

Client Sample ID: TP-12 Collection Date: 2/26/2007 2:30:00 PM Date Received: 2/27/2007 Matrix: AQUEOUS

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE	·····				Analyst: SCC
Diesel Range Organics (DRO)	ND	1.0	mg/L	1	2/28/2007 2:15:13 PM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	2/28/2007 2:15:13 PM
Surr: DNOP	117	58-140	%REC	1	2/28/2007 2:15:13 PM
EPA METHOD 8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Range Organics (GRO)	ND	0.050	mg/L	1	2/28/2007 1:01:30 AM
Surr: BFB	110	79.2-121	%REC	1	2/28/2007 1:01:30 AM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5	µg/L	1	2/28/2007 1:01:30 AM
Benzene	ND	1.0	µg/L	1	2/28/2007 1:01:30 AM
Toluene	ND	1.0	µg/L	1	2/28/2007 1:01:30 AM
Ethylbenzene	ND	1.0	µg/L	1	2/28/2007 1:01:30 AM
Xylenes, Total	ND	2.0	µg/L	1	2/28/2007 1:01:30 AM
Surr: 4-Bromofluorobenzene	92.0	70.2-105	%REC	1	2/28/2007 1:01:30 AM

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

7/11

Page 7 of 7



CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0702319 River Terrace - 1st Qua 0702319-06	arter 2007		С	lient Sa Collect Date I	mple ID: on Date: Received: Matrix:	TP-9 2/26/2 2/27/2 AQUE	007 1:35:00 PM 007 EOUS
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD 8	015B: DIESEL RANGE			· · · · · · · · · · · · · · · · · · ·		······	· .	Analyst: SCC
Diesel Range Org	ganics (DRO)	ND	1.0		mg/L		1	2/28/2007 1:40:47 PM
Motor Oil Range	Organics (MRÖ)	ND	5.0		mg/L		1	2/28/2007 1:40:47 PM
Surr: DNOP		116	58-140		%REC		1	2/28/2007 1:40:47 PM
EPA METHOD 8	015B: GASOLINE RANG	ε						Analyst: NSB
Gasoline Range	Organics (GRO)	ND	0.050		mg/L		1	2/28/2007 12:31:30 AM
Surr: BFB		108	79.2-121		%REC		1	2/28/2007 12:31:30 AM
EPA METHOD 8	021B: VOLATILES							Analyst: <b>NSB</b>
Methyl tert-butyl	ether (MTBE)	ND	2.5		µg/L		1	2/28/2007 12:31:30 AM
Benzene	· · ·	ND	1.0		µg/L		1	2/28/2007 12:31:30 AM
Toluene		ND	1.0		μg/L		· 1	2/28/2007 12:31:30 AM
Ethylbenzene		ND	1.0		μg/L	· .	1	2/28/2007 12:31:30 AM
Xylenes, Total		ND	2.0		µg/L		1 :	2/28/2007 12:31:30 AM
Surr: 4-Bromo	fluorobenzene	88.1	70.2-105		%REC		1	2/28/2007 12:31:30 AM

Date: 02-Mar-07

\*

Qualifiers:

Value exceeds Maximum Contaminant Level

E Value above quantitation range J

Analyte detected below quantitation limits

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

6/11

- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- Reporting Limit RL

Page 6 of 7

CLIENT:	San Juan Refining			Client Sample I	D: TP-1				
Lab Order:	0702319			Collection Da	Date: 2/26/2007 1:10:00 PM				
Project:	River Terrace - 1st Ou	arter 2007		Data Receive	ved: 2/27/2007				
r . m				Mate Meterve	$\mathbf{u} \cdot \mathbf{z} = \mathbf{z} = \mathbf{z}$	SOUS			
Lab ID:	0/02319-05					.003			
Analyses		Result	PQL	Qual Units	DF	Date Analyzed			
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC			
Diesel Range (	Organics (DRO)	3.0	1.0	mg/L	1	2/28/2007 1:06:25 PM			
Motor Oil Rang	je Organics (MRO)	ND	5.0	mg/L	1	2/28/2007 1:06:25 PM			
Surr: DNOP		111	58-140	%REC	1	2/28/2007 1:06:25 PM			
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB			
Gasoline Rang	e Organics (GRO)	160	5.0	mg/L	100	2/27/2007 11:31:21 PM			
Surr: BFB	- · · ·	117	79.2-121	%REC	100	2/27/2007 11:31:21 PM			
EPA METHOD	8021B: VOLATILES				¢	Analyst: <b>NSB</b>			
Methyl tert-but	yl ether (MTBE)	ND	250	µg/L	100	2/27/2007 11:31:21 PM			
Benzene		2000	100	µg/L	100	2/27/2007 11:31:21 PM			
Toluene		ND	100	µg/L	100	2/27/2007 11:31:21 PM			
Ethylbenzene		6300	100	µg/L	100	2/27/2007 11:31:21 PM			
Xylenes, Total	• • • • • •	32000	500	μg/L	250	2/28/2007 5:23:57 PM			
Surr: 4-Brom	nofluorobenzene	91.5	70.2-105	%REC	100	2/27/2007 11:31:21 PM			

Qualifiers: \*

Value exceeds Maximum Contaminant Level Value above quantitation range

E

Analyte detected below quantitation limits J

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

5/11

Date: 02-Mar-07

В Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 5 of 7

CLIENT: Lab Order: Project:	CLIENT:San Juan RefiningClient Sample ILab Order:0702319Collection DaProject:River Terrace - 1st Quarter 2007Date ReceiveLab ID:0702319-04Matr					le ID: Date: eived:	TP-6 2/26/2007 12:45:00 PM 2/27/2007 AOUEOUS			
Lab 1D:	0702319-04									
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE							Analyst: SCC		
Diesel Range O	rganics (DRO)	ND	1.0		mg/L		1	2/28/2007 12:32:01 PM		
Motor Oil Range	e Organics (MRO)	ND	5.0		mg/L		1	2/28/2007 12:32:01 PM		
Surr: DNOP		114	58-140		%REC		1	2/28/2007 12:32:01 PM		
EPA METHOD	8015B: GASOLINE RAN	IGE						Analyst: NSB		
Gasoline Range	e Organics (GRO)	0.28	0.050		mg/L		1	2/28/2007 4:53:51 PM		
Surr: BFB		122	79.2-121	S	%REC		1.	2/28/2007 4:53:51 PM		
EPA METHOD	8021B: VOLATILES							Analyst: <b>NSB</b>		
Methyl tert-buty	l ether (MTBE)	ND	2.5		µg/L		1	2/28/2007 4:53:51 PM		
Benzene		ND	1.0		µg/L		1	2/28/2007 4:53:51 PM		
Toluene		· ND	1.0		'ug/L		1	2/28/2007 4:53:51 PM		
Ethylbenzene		ND	1.0		µg/L		1	2/28/2007 4:53:51 PM		
Xylenes, Total	· · · · · ·	`ND	2.0		μg/L		1	2/28/2007 4:53:51 PM		
Surr 4-Brom	ofluorobenzene	91.4	70 2-105		%REC		1	2/28/2007 4:53:51 PM		

Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method BlankH Holding times for preparation or analysis exceeded

Date: 02-Mar-07

MCL Maximum Contaminant Level

RL Reporting Limit

4/11
CLIENT:	San Juan Refining			Client Sample II	): TP-2	
Lab Order:	0702319			<b>Collection Dat</b>	e: 2/26/2	2007 10:45:00 AM
Project:	River Terrace - 1st Qu	arter 2007		Date Receive	<b>1:</b> 2/27/2	2007
Lab ID:	0702319-03	-		Matri	x: AQUI	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Drganics (DRO)	2.1	1.0	mg/L	1	2/28/2007 11:57:38 AM
Motor Oil Range Organics (MRO)		ND	5.0	mg/L	1	2/28/2007 11:57:38 AM
Surr: DNOP		93.8	58-140	%REC	1	2/28/2007 11:57:38 AM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Rang	e Organics (GRO)	94	5.0	mg/L	100	2/27/2007 10:28:23 PM
Surr: BFB		115	79.2-121	%REC	100	2/27/2007 10:28:23 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Methyl tert-but	yl ether (MTBE)	ND	250	µg/L	100	2/27/2007 10:28:23 PM
Benzene		4300	100	μg/L	100	2/27/2007 10:28:23 PM
Toluene		ND	100	µg/L	100	2/27/2007 10:28:23 PM
Ethylbenzene		4300	100	μg/L	100	2/27/2007 10:28:23 PM
Xylenes, Total		19000	200	µg/L	100	2/28/2007 3:23:25 PM
Surr: 4-Bron	nofluorobenzene	92.1	70.2-105	%REC	100	2/27/2007 10:28:23 PM

Value exceeds Maximum Contaminant Level

E Value above quantitation range

Qualifiers:

\*

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

Date: 02-Mar-07

- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 3 of 7



3/11

CLIENT: Lab Order:	San Juan Refining			Client Sa Colloct	imple ID:	TP-5	007 10-20-00 AM		
Project:	Biver Terrace - 1st O	marter 2007		Datal	Donoivod	2/27/2007 2/27/2007 AQUEOUS			
Lab ID:	0702319-02			Date	Matrix:				
Analyses	·	Result	PQL	Qual Units	t <u> </u>	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC		
Diesel Range C	Organics (DRO)	ND	1.0	mg/L		1	2/28/2007 11:23:27 AM		
Motor Oil Range Organics (MRO)		ND	5.0	mg/L		1	2/28/2007 11:23:27 AM		
Surr: DNOP		118	58-140	%REC		1	2/28/2007 11:23:27 AM		
EPA METHOD	8015B: GASOLINE RAI	NGE					Analyst: NSB		
Gasoline Rang	e Organics (GRO)	85	5.0	mg/L		100	3/1/2007 9:55:06 AM		
Surr: BFB		113	79.2-121	%REC		100	3/1/2007 9:55:06 AM		
EPA METHOD	8021B: VOLATILES						Analyst: <b>NS</b> B		
Methyl tert-buty	/I ether (MTBE)	ND	25	µg/L		10	2/28/2007 1:53:21 PM		
Benzene		ND	10	µg/L		10	2/28/2007 1:53:21 PM		
Toluene	• · · · ·	• ND	10	µg/L		10	2/28/2007 1:53:21 PM		
Ethylbenzene		1300	50	hð\r		50	2/27/2007 9:55:37 PM		
Xylenes, Total		18000	200	μg/L		100	3/1/2007 9:55:06 AM		
Surr: 4-Brom	nofluorobenzene	91.2	70.2-105	%REC		50	2/27/2007 9:55:37 PM		

#### Qualifiers: \* Е

J

Value exceeds Maximum Contaminant Level Value above quantitation range

Hall Environmental Analysis Laboratory, Inc.

- Analyte detected below quantitation limits
- Not Detected at the Reporting Limit ND
- S Spike recovery outside accepted recovery limits
  - 2/11
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded

Date: 02-Mar-07

MCL Maximum Contaminant Level

RL Reporting Limit

Date: 02-Mar-07

CLIENT:San Juan RefiningClient Sample ID:TP-8Lab Order:0702319Collection Date:2/26/2007 9:40:00 AMProject:River Terrace - 1st Quarter 2007Date Received:2/27/2007Lab ID:0702319-01Matrix:AQUEOUS

Analyses	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANG	E				Analyst: SCC
Diesel Range Organics (DRO)	2.1	1.0	mg/L	1	2/28/2007 10:49:01 AM
Motor Oil Range Organics (MRO)	ND	5.0	mg/L	1	2/28/2007 10:49:01 AM
Surr: DNOP	113	58-140	%REC	1	2/28/2007 10:49:01 AM
EPA METHOD 8015B: GASOLINE RA	NGE				Analyst: NSB
Gasoline Range Organics (GRO)	70	0.50	mg/L	10	2/27/2007 8:50:26 PM
Surr: BFB	120	79.2-121	%REC	10	2/27/2007 8:50:26 PM
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	25	μg/L	10	2/27/2007 8:50:26 PM
Benzene	ŇD	10	µg/L	10	2/27/2007 8:50:26 PM
Toluene	ND	10	µg/L	10	2/27/2007 8:50:26 PM
Ethylbenzene	1300	100	µg/L	<sup>~</sup> 100	2/27/2007 8:17:42 PM
Xylenes, Total	13000	200	µg/L	100	2/27/2007 8:17:42 PM
Surr: 4-Bromofluorobenzene	95.6	70.2-105	%REC	10	2/27/2007 8:50:26 PM

Qualifiers:

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

1/11

/



#### COVER LETTER

Friday, March 02, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: River Terrace - 1st Quarter 2007

Dear Cindy Hurtado:

Order No.: 0702319

Hall Environmental Analysis Laboratory, Inc. received 7 sample(s) on 2/27/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE ⊠Suite D ⊠Albuquerque, NM 87109 505.345.3975 ■Fax 505.345.4107 www.hallenvironmental.com



#### COVER LETTER

Friday, March 02, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC Analysis- 2/27/07

Dear Cindy Hurtado:

Order No.: 0702367

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 2/28/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

201 \_\_\_\_

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENT:	San Juan Refining			Client Sample II	): GAC	1 Eff		
Lab Order:	0702367			<b>Collection Dat</b>	e: 2/27/2	2007 11:20:00 AM		
Project:	GAC Analysis- 2/27/07			<b>1:</b> 2/28/2	: 2/28/2007			
Lab ID:	0702367-01			Matri	x: AQU	AQUEOUS		
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE		<u></u>	··· ··· ·		Analyst: SCC		
Diesel Range C	Organics (DRO)	ND	1.0	mg/L	1	3/1/2007 3:41:34 PM		
Motor Oil Rang	ND	5.0	mg/L	1	3/1/2007 3:41:34 PM			
Surr: DNOP		117	58-140	%REC	1	3/1/2007 3:41:34 PM		
EPA METHOD	8015B: GASOLINE RANG	E				Analyst: NSB		
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	3/1/2007 10:37:27 PM		
Surr: BFB		111	79.2-121	%REC	1	3/1/2007 10:37:27 PM		
EPA METHOD	8021B: VOLATILES					Analyst: NSB		
Benzene		ND	1.0	µg/∟	1	3/1/2007 10:37:27 PM		
Toluene		ND	1.0	µg/L	1	3/1/2007 10:37:27 PM		
Ethylbenzene		ND	1.0	µg/L	1	3/1/2007 10:37:27 PM		
Xylenes, Total		ND	2.0	µg/L	1	3/1/2007 10:37:27 PM		
Surr: 4-Bromofluorobenzene		91.7	70.2-105	%REC	1	3/1/2007 10:37:27 PM		

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Qualifiers:

\* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded

Date: 02-Mar-07

MCL Maximum Contaminant Level

RL Reporting Limit

Page 1 of 2

1 / 4

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0702367 GAC Analysis- 2/27/07 0702367-02			Client Sample ID Collection Date Date Received Matrix	: GAC : 2/27/2 : 2/28/2 : AQU	GAC 2 Eff 2/27/2007 11:30:00 AM 2/28/2007 AQUEOUS			
Analyses		Result	PQL	Qual Units	DF	Date Analyzed			
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC			
Diesel Range O	ND	1.0	mg/L	1	3/1/2007 4:15:58 PM				
Motor Oil Range Organics (MRO)		ND	5.0	mg/L	1	3/1/2007 4:15:58 PM			
Surr: DNOP		118	58-140	%REC	1	3/1/2007 4:15:58 PM			
EPA METHOD	8015B: GASOLINE RANG	Ξ				Analyst: NSB			
Gasoline Range	e Organics (GRO)	ND	0.050	mg/L	1	3/1/2007 11:07:38 PM			
Surr: BFB	,	114	79.2-121	%REC	1	3/1/2007 11:07:38 PM			
EPA METHOD	8021B: VOLATILES					Analyst: NSB			
Benzene		ND	1.0	µg/L	1	3/1/2007 11:07:38 PM			
Toluene		ND	1.0	µg/L	1	3/1/2007 11:07:38 PM			
Ethylbenzene		ND	1.0	µg/L	1	3/1/2007 11:07:38 PM			
Xylenes, Total		ND	2.0	µg/L	1	3/1/2007 11:07:38 PM			
Surr: 4-Brom	ofluorobenzene	94.2	70.2-105	%REC	1	3/1/2007 11:07:38 PM			

Qualifiers: \* Value exceeds Maximum Contaminant Level

E Value above quantitation range

Hall Environmental Analysis Laboratory, Inc.

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank Н Holding times for preparation or analysis exceeded

Date: 02-Mar-07

MCL Maximum Contaminant Level

RL Reporting Limit

Page 2 of 2

2/4

# QA/QC SUMMARY REPORT

Project: GAC Analysi	s- 2/27/07						Work C	Order: 0702367
Analyte	Result	Units	PQL	%Rec	LowLimit Hig	ghLimit	%RPD RPDI	Limit Qual
Method: SW8015								
Sample ID: MB-12410		MBLK			Batch ID:	12410	Analysis Date:	3/1/2007 1:58:25 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0					
Sample ID: LCS-12410		LCS			Batch ID:	12410	Analysis Date:	3/1/2007 2:32:49 PM
Diesel Range Organics (DRO)	5.603	mg/L	1.0	112	74 1	157		
Sample ID: LCSD-12410		LCSD			Batch ID:	12410	Analysis Date:	3/1/2007 3:07:09 PM
Diesel Range Organics (DRO)	5.623	mg/L	1.0	112	74	157	0.362 23	
Method: SW8015								
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R22664	Analysis Date:	3/1/2007 7:58:58 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R22664	Analysis Date:	3/2/2007 6:37:59 AM
Gasoline Range Organics (GRO)	0.5380	mg/L	0.050	108	80	115		·
Method: SW8021								
Sample ID: RB-II		MBLK			Batch ID:	R22664	Analysis Date:	3/2/2007 2:07:52 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	μg/L	. 1.0					
Ethylbenzene	ND	μg/L	1.0					
Xylenes, Total	ND	.µg/L	2.0					_
Sample ID: 100NG BTEX LCS-II		LCS			Batch ID:	R22664	Analysis Date:	3/2/2007 2:37:53
Benzene	20.24	µg/L	1.0	101	85.9	113		
Toluene	20.31	µg/L	1.0	102	86.4	113		
Ethylbenzene	20.41	µg/L	1.0	102	83.5	118		
Xylenes, Total	62.18	µg/L	2.0	104	83.4	122		

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

3/4

ND

Page 1

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Sal	inple Receipt Cr	ieckiist		
Client Name SJR		Date and Time	Received:	2/28/2007
Nork Order Number 0702367		Received by	TLS	
Checklist completed by June Stand	Je	628,67		
Aatrix Carrier n	ame <u>UPS</u>			
Shipping container/cooler in good condition?	Yes 🗹	No 🗌	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes	No 🗌	N/A	
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 🗌		
Water - VOA vials have zero headspace? No VOA vial	s submitted	Yes 🗹	No 🗌	
Water - Preservation labels on bottle and cap match?	Yes	No 🗌	N/A 🔽	
Water - pH acceptable upon receipt?	Yes	No 🗌	N/A 🗹	
Container/Temp Blank temperature?	3°	4° C ± 2 Accepta	able	
COMMENTS:		If given sufficient	t time to cool.	
Client contacted Date contacted	d:	Pers	on contacted	
Contacted by: Regarding				
Comments:				
·		··		
Corrective Action	14 <sup>2</sup> -4			

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109 Tel. 505.345.3975 Fax 505.345.4107	AWW hallenvironmental.com	s (8021) 5asoline Only) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082) 5(8082	178€ + TPH (( od 80158 (G; hod 504.1) hod 504.1) hod 504.1) ticides / PCB' ticides / PCB' (AD) (AD) ticides / PCB' (AD) (AD) (AD) (AD) (AD) (AD) (AD) (AD)	#TEX + 77 #TEX + 77 #TEX + 78 #TEX +		XXX						Remarks:
QA/ QC Package: Std 🔲 Level 4 🗍 Other:	CAC Analysis - 2/27/07 Project #:	Project Manager:	Sarthlery M. Park Bolo Kaker Sample Remperatures 3 °	Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> / <i>kl</i> CTCZ 340-7	4-104-1	2 / Hart	7					Received By: (Signature) 2/25/07 CVM A CVM A CONTROLOT
CHAIN-OF-CUSTODY RECORD	Address: # 50 72/ 490	Plean full NM BAULS	Phone #505-633-4161 Fax#: 505-633-3911	Date Time Matrix Sample I.D. No.	alphon I and the CACIET	There I want & GAREFF				-		Date: Time: Relinquished By: (Signature)



#### COVER LETTER

Tuesday, March 20, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 3-13-07

Dear Cindy Hurtado:

Order No.: 0703192

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 3/14/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001





4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENT:	San Juan Refining			Client Sample I	D: 1-Inle	t
Lab Order:	0703192			Collection Da	te: 3/13/2	007 9:35:00 AM
Project:	GAC 3-13-07			Date Receive	ed: 3/14/2	007
Lab ID:	0703192-01	•		Matr	ix: AQUI	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	ND	1.0	mg/L	1	3/15/2007 5:59:35 PM	
Motor Oil Range Organics (MRO)		ND	5.0	mg/L	1	3/15/2007 5:59:35 PM
Surr: DNOP		122	58-140	%REC	1	3/15/2007 5:59:35 PM
EPA METHOD	8015B: GASOLINE RAN	GE			11 11 11 11	Analyst: NSB
Gasoline Rang	e Organics (GRO)	12	0.50	mg/L	10	3/15/2007 2:43:21 PM
Surr: BFB		110	79.2-121	%REC	10	3/15/2007 2:43:21 PM
EPA METHOD	8021B: VOLATILES		•			Analyst: NSB
Benzene		230	10	µg/L	10	3/15/2007 2:43:21 PM
Toluene		39	10	µg/L	10	3/15/2007 2:43:21 PM
Ethylbenzene		860	10	µg/L	10	3/15/2007 2:43:21 PM
Xylenes, Total		2900	40	µg/L	20	3/16/2007 11:22:50 AM
Surr: 4-Bron	nofluorobenzene	86.6	70.2-105	%RFC	10	3/15/2007 2:43:21 PM

Date: 20-Mar-07

- E Value above quantitation range
- J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits 1/6
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

RL Reporting Limit

Page 1 of 3.

South .

CLIENT:	San Juan Refining			C	lient Sample ID:	Eff-1	Eff-1 3/13/2007 9:30:00 AM			
Lab Order:	0703192				Collection Date:	3/13/2				
Project:	GAC 3-13-07			3/14/2	3/14/2007					
Lab ID:	0703192-02				Matrix:	AQUI	AQUEOUS			
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed			
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC			
Diesel Range (	Organics (DRO)	ND	1.0		mg/L	1	3/15/2007 6:34:35 PM			
Motor Oil Range Organics (MRO)		ND	5.0		mg/L	1	3/15/2007 6:34:35 PM			
Surr: DNOP		123	58-140		%REC	1	3/15/2007 6:34:35 PM			
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB			
Gasoline Rang	e Organics (GRO)	ND	0.050		mg/L	1	3/15/2007 3:43:24 PM			
Surr: BFB	· · ·	108,	79.2-121		%REC	1	3/15/2007 3:43:24 PM			
EPA METHOD	8021B: VOLATILES						Analyst: NSB			
Benzene		2.7	1.0		µg/L	1	3/15/2007 3:43:24 PM			
Toluene		ND	1.0		µg/L	1	3/15/2007 3:43:24 PM			
Ethylbenzene		ND	1.0		µg/L	1	3/15/2007 3:43:24 PM			
Xylenes, Total		ND	2.0		µg/L	1	3/15/2007 3:43:24 PM			
Surr: 4-Bron	nofluorobenzene	85.8	70.2-105		%REC	1	3/15/2007 3:43:24 PM			

- \* Value exceeds Maximum Contaminant Level
- E Value above quantitation range

- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 2 / 6
- B Analyte detected in the associated Method Blank

Date: 20-Mar-07

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Date: 20-Mar-07

1

1

3/15/2007 4:13:29 PM

3/15/2007 4:13:29 PM

3/15/2007 4:13:29 PM

CLIENT:	San Juan Refining			Client	Sample ID:	Eff-2	)		
Lab Order:	0703192			Colle	ection Date:	3/13/	2007 9:25:00 AM		
Project:	GAC 3-13-07			Dat	Date Received: Matrix:		3/14/2007 AQUEOUS		
Lab ID:	0703192-03								
Analyses	······································	Result	PQL	Qual Uni	ts	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE				٠		Analyst: SCC		
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	-	1	3/15/2007 7:09:17 PM		
Motor Oil Rang	je Organics (MRO)	ND	5.0	mg/L	-	1 1	3/15/2007 7:09:17 PM		
Surr: DNOP		131	58-140	%RE	EC	1	3/15/2007 7:09:17 PM		
EPA METHOD	8015B: GASOLINE RAN	GE				:	Analyst: NSB		
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L		1	3/15/2007 4:13:29 PM		
Surr: BFB		110	79.2-121	%RE	EC	1	3/15/2007 4:13:29 PM		
EPA METHOD	8021B: VOLATILES						Analyst: <b>NSB</b>		
Benzene		ND	1.0	µg/L		1	3/15/2007 4:13:29 PM		
Toluene		ND	1.0	µg/L		1	3/15/2007 4:13:29 PM		

ND

ND

86.8 70.2-105 %REC 1

1.0

2.0

µg/L

µg/L

Qualifiers:

\*

Ethylbenzene

Xylenes, Total

Surr: 4-Bromofluorobenzene

Value exceeds Maximum Contaminant Level

Е Value above quantitation range J

Analyte detected below quantitation limits

Not Detected at the Reporting Limit ND

- Spike recovery outside accepted recovery limits 3/6 S
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

12

# **QA/QC SUMMARY REPORT**

Client:	
roject	:

4

San Juan Refining GAC 3-13-07

Work Order: 0703192

Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RP	DLimit Qual
Method: SW8015 Sample ID: MB-12514		MBLK			Batch ID: 12514	Analysis Date:	3/15/2007 3:39:45 PM
Diesel Range Organics (DRO) Motor Oil Range Organics (MRO) Sample ID: LCS-12514	ND ND	mg/L mg/L LCS	1.0 5.0		Batch ID: 12514	Analysis Date:	3/15/2007 4:14:41 PM
Diesel Range Organics (DRO) Sample ID: LCSD-12514	5.808	mg/L LCSD	1.0	116	74 157 Batch ID: 12514	Analysis Date:	3/15/2007 4:49:41 PM
Diesel Range Organics (DRO)	6.117	mg/L	1.0	122	74 157	5.18 2	23
Method: ŚW8015 Sample ID: 0703192-02A MSD		MSD			Batch ID: R22853	Analysis Date:	3/15/2007 5:13:46 PM
Gasoline Range Organics (GRO) Sample ID: 5ML REAGENT BLA	0.5084	mg/L <i>MBLK</i>	0.050	92.3	80 115 Batch ID: <b>R2285</b> 3	0.592 8 8 Analysis Date:	.39 3/15/2007 7:25:08 AM
Gasoline Range Organics (GRO) Sample ID: 5ML REAGENT BLA	ND	mg/L <i>MBLK</i>	0.050		Batch ID: R22868	Analysis Date:	3/16/2007 9:49:32 AM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	ND	mg/L LCS	0.050		Batch ID: R22853	Analysis Date:	3/15/2007 5:43:56 PM
Gasoline Range Organics (GRO) Sample ID: 2.5UG GRO LCS	0.5016	mg/L LCS	0.050	100	80 115 Batch ID: <b>R2286</b> 8	Analysis Date:	3/16/2007 10:01:18 PM
Gasoline Range Organics (GRO)	0.5152	mg/L LCSD	0.050	99.6	80 115 Batch ID: <b>R2286</b> 8	Analysis Date:	3/16/2007 10:31:24 PM
Gasoline Range Organics (GRO) Sample ID: 0703192-02A MS	0.4586	mg/L MS	0.050	88.2	80 115 Batch ID: <b>R2285</b>	11.6 Analysis Date:	15 3/15/2007 4:43:37 PM
Gasoline Range Organics (GRO)	0.5054	mg/L	0.050	91.7	80 115		

Qualifiers:

E Value above quantitation range

J Analyte detected below quantitation limits

R \_ RPD outside accepted recovery limits

н

S

H Holding times for preparation or analysis exceededND Not Detected at the Reporting Limit

4 / 6<sup>ecovery</sup> outside accepted recovery limits

Page 1

# QA/QC SUMMARY REPORT

Client:

San Juan Refining GAC 3-13-07

Project: GAC 3-13-07	7	· · ·					Wor	<b>k Order</b> : 0703192
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD R	PDLimit Qual
Method: SW8021						-		
Sample ID: 0703192-03A MSD		MSD			Batch I	D: R22853	Analysis Date:	3/15/2007 7:14:08 PM
Benzene	19.57	µg/L	1.0	97.8	85.9	113	0.102	27
Toluene	20.01	µg/L	1.0	100	86.4	113	0.409	19
Ethylbenzene	20.17	µg/L	1.0	101	83.5	118	0.338	10
Xylenes, Total	59.76	µg/L	2.0	99.6	83.4	122	0.936	13
Sample ID: 5ML REAGENT BLA		MBLK			Batch I	D: <b>R22853</b>	Analysis Date:	3/15/2007 7:25:08 AM
Benzene	ND	µg/L	1.0					
Toluene	ND	μg/L	1.0					
Ethylbenzene	ND	µg/L	1.0				1	
Xylenes, Total	ND	μg/L	2.0					
Sample ID: 5ML REAGENT BLA		MBLK			Batch	ID: R22868	Analysis Date:	: 3/16/2007 9:49:32 AM
Benzene	ND	µa/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	ua/L	1.0					
Xylenes, Total	ND	μg/L	2.0					
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: R22853	Analysis Date:	: 3/15/2007 7:44:14 PM
Benzene	20.17	ua/L	1.0	101	85.9	113		
Toluene	20.54	μα/L	1.0	103	86.4	113	· .	
Ethylbenzene	20.61	µg/L	1.0	103	83.5	118		
Xylenes, Total	61.78	ug/L	2.0	103	83.4	122		and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second sec
Sample ID: 100NG BTEX LCS		LCS			Batch	ID: <b>R22868</b>	Analysis Date	: 3/16/2007 7:59:16 PM
Benzene	19.76	µg/L	1.0	98.8	85.9	113		
Toluene	20.11	µg/L	1.0	101	86.4	113		
Ethylbenzene	20.25	µg/L	1.0	101	83.5	118		4
Xylenes, Total	60.50	µg/L	2.0	101	83.4	122		
Sample ID: 100NG BTEX LCSD		LCSD			Batch	ID: <b>R22868</b>	Analysis Date	: 3/16/2007 8:30:58 PM
Benzene	19.38	µg/L	1.0	96.9	85.9	113	1.92	27
Toluene	19.67	ug/L	1.0	98.4	86.4	113	2.22	19
Ethylbenzene	19.88	µg/L	1.0	99.4	83.5	118	1.88	10
Xylenes, Total	59.09	μg/L	2.0	98.5	83.4	122	2.36	13
Sample ID: 0703192-03A MS		MS			Batch	ID: R22853	Analysis Date	: 3/15/2007 6:44:11 PM
Benzene	19.59	µa/L	1.0	98.0	85.9	113		
Toluene	20.09	μα/L	1.0	100	86.4	113		
Ethylbenzene	20.10	µa/L	1.0	101	83.5	118		
Xvienes, Total	60.32	ua/L	2.0	101	83.4	122		
· · · · · · · · · · · · · · · · · · ·		F O ···				· <b>=</b> -		

- Qualifiers:
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

H Holding times for preparation or analysis exceeded

Not Detected at the Reporting Limit

ND

S

 $5/6^{\text{recovery outside accepted recovery}}$ limits

Sam	ple Receipt Ch	necklist				
Client Name SJR		Date and Tir	ne Received:		3/1	4/20
Nork Order Number 0703192		Received I	by TLS			
Checklist completed by Signature	3/14 Date	67				
Matrix Carrier nar	ne <u>UPS</u>					
Shipping container/cooler in good condition?	Yes 🗹	No 🗌	Not Present			
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗌	Not Present		Not Shipped	
Custody seals intact on sample bottles?	Yes 🗌	No 🗌	N/A	$\checkmark$		
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 🗌				
Water - VOA vials have zero headspace? No VOA vials	submitted	Yes 🔽	No	]		
Water - Preservation labels on bottle and cap match?	Yes	No 🗌	N/A 🔽	]		
Water - pH acceptable upon receipt?	Yes 🗌	No 🗌	N/A 🔽	]		
Container/Temp Blank temperature?	3°	4° C ± 2 Acce	otable			
COMMENTS:		If given suffici	ent time to cool.			
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Client contacted Date contacted:		Ρ	erson contacted			
Contacted by: Regarding						
Comments:						
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					51)	08) <b>s(</b>				$\checkmark$	$\checkmark$	$\checkmark$	 		<u> </u>					Remark	
QA / QC Package: Std 🔲 Level 4 🔲 Other:	Project Name:	GAC 3-13-07	Project #:	J' Outrite 2007	Project Manager:	Indu Harrado	Sampler: And And And	Sample Temperature:	Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> Hcl OTC3 YG 2	4-VOA X 1	4-VoA X 2	H-10A X 3								Received By: (Signature) 3/1/1/07	Received By: (Signatural)
chaim-of-custody record	Client SAN JUAN REFINING	#50 CR 4990	Address Bloom G. 1d, NM 87413				Phone #: 505-632 - 41 6	Fax#: 505-632-39 //	Date Time Matrix Sample I.D. No.	3-13-87 9:35 H.O 1-IN/et	1 9,33 H. O EFF-1	1 9125 Ha O Eft - 2						· ·		Date: Time: Relinquished By: (Signature)	Date: Time: Relinquished By: (Signature)



#### COVER LETTER

Wednesday, March 28, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 3-21-07

Dear Cindy Hurtado:

Order No.: 0703335

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 3/22/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

-

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107 www.hallenvironmental.com

	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·				
CLIENT:	San Juan Refining			<b>Client Sample ID</b>	: EFF-	
Lab Order:	0703335			<b>Collection Date</b>	e: 3/21/	2007 8:55:00 AM
Project:	GAC 3-21-07			Date Received	<b>I</b> : 3/22/	2007
Lab ID:	0703335-01			Matrix	: AQU	JEOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8	015B: DIESEL RANGE					Analyst: SCC
Diesel Range Or	ganics (DRO)	1.2	1.0	mg/L	1	3/27/2007 2:10:39 PM
Motor Oil Range	Organics (MRO)	ND	5.0	mg/L	1	3/27/2007 2:10:39 PM
Surr: DNOP		123	58-140	%REC	1	3/27/2007 2:10:39 PM
EPA METHOD	3015B: GASOLINE RAN	GE		· · · ·		Anaiyst: NSB
Gasoline Range	Organics (GRO)	0.051	0.050	mg/L	1	3/23/2007 1:08:47 AM
Surr: BFB		112	79.2-121	%REC	1	3/23/2007 1:08:47 AM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Benzene		3.4	1.0	µg/L	1	3/23/2007 1:08:47 AM
Toluene		ND	1.0	µg/L	1	3/23/2007 1:08:47 AM
Ethylbenzene		ND	1.0	µg/L	1	3/23/2007 1:08:47 AM
Xylenes, Total		ND	2.0	µg/L	1	3/23/2007 1:08:47 AM
Surr: 4-Brome	ofluorobenzene	88.6	70.2-105	%REC	1	3/23/2007 1:08:47 AM

Date: 28-Mar-07

Qualifiers:

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Value exceeds Maximum Contaminant Level

Е Value above quantitation range J

Analyte detected below quantitation limits

- Not Detected at the Reporting Limit ND
- Spike recovery outside accepted recovery limits S
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 1

1/3



# **QA/QC SUMMARY REPORT**

Client:San Juan RefProject:GAC 3-21-07	ining 7					Work C	Drder: 0703335
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RPDI	_imit Qual
Method: SW8015					1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	Name ( 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 19	
Sample ID: MB-12590		MBLK			Batch ID: 12590	Analysis Date:	3/27/2007 11:53:27 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0				
Motor Oil Range Organics (MRO)	ND	mg/L	5.0				
Sample ID: LCS-12590		LCS			Batch ID: 12590	Analysis Date:	3/27/2007 1:01:56 PM
Diesel Range Organics (DRO)	4.535	mg/L	1.0	90.7	74 157		
Sample ID: LCSD-12590		LCSD			Batch ID: 12590	Analysis Date:	3/27/2007 1:36:17 PM
Diesel Range Organics (DRO)	5.484	mg/L	1.0	110	74 157	18.9 23	
Method: SW8015	•						
Sample ID: 0703335-01A MSD		MSD			Batch ID: R22935	Analysis Date:	3/23/2007 2:08:59 AM
Gasoline Range Organics (GRO)	0 4006	ma/l	0.050	80.7	80 115	0.759 8.30	<b>)</b>
Sample ID: 5MI REAGENT BLA	0.4990	MBLK	0.050	09.7	Batch ID: <b>P2203</b>	0.700 0.0	2/22/2007 7·57·21 ΔΜ
		MDER	0.050			Analysis Date.	5/22/2001 1.51.21 / 10
Gasoline Range Organics (GRO)	ND	mg/L	0.050				
Sample ID: 2.50G GRO LCS		LUS			Batch ID: R2293	Analysis Date:	3/23/2007 4:09:12 AM
Gasoline Range Organics (GRO)	0.4128	mg/L	0.050	82.6	80 115		
Sample ID: 0703335-01A MS		MS			Batch ID: R2293	6 Analysis Date:	3/23/2007 1:38:49 AM
Gasoline Range Organics (GRO)	0.5034	mg/L	0.050	90.4	80 115		
Method: SW8021							
Sample ID: 0703335-01A MSD		MSD			Batch ID: R2293	5 Analysis Date:	3/23/2007 2:08:59 AM
Benzene	9.290	µg/L	1.0	105	85.9 113	0.921 27	
Toluene	41.43	μg/L	1.0	103	86.4 113	0.261 19	
Ethylbenzene	8.016	µg/L	1.0	101	83.5 118	0.448 10	
Xylenes, Total	47.07	μg/L	2.0	102	83.4 122	0.0722 13	
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID: R2293	5 Analysis Date:	3/22/2007 7:57:21 AM
Benzene	ND	ua/L	1.0				
Toluene	ND	μg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Sample ID: 100NG BTEX LCS		LCS			Batch ID: R2293	5 Analysis Date:	3/23/2007 2:38:58 AM
Benzene	20.19	ua/L	1.0	101	85.9 113		
Toluene	20.63	µa/L	1.0	103	86.4 113		
Ethylbenzene	20.52	μg/L	1.0	103	83.5 118		
Xylenes, Total	61.53	µg/L	2.0	103	83.4 122		
Sample ID: 0703335-01A MS		MS			Batch ID: R2293	5 Analysis Date:	3/23/2007 1:38:49 AN
Benzene	9.376	µg/L	1.0	107	85.9 113	-	
Toluene	41.32	µg/L	1.0	102	86.4 113		
Ethylbenzene	8.052	µg/L	1.0	102	83.5 118		
Xylenes, Total	47.10	µg/L	2.0	102	83.4 122		

Qua	lifiers:		
Е	Value above quantitation range	Н	Holding times for preparation or analysis exceeded
 J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

S Spike recovery outside accepted recovery limits

2/3

Page 1

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<b>*</b> * *							'n		S.
Hall Environmental Analysis Labo	oratory, Inc.								
	Sample	Rece	eipt Che	cklist					· · ·
Client Name SJR	1		ı	Date and T	ime Received:		3/	22/2007	
Work Order Number 0703335				Received	d by TL	s			
	pe		3-2 Date	2-07					·
Matrix	Carrier name	<u>Clier</u>	nt drop-off	5					
Shipping container/cooler in good condition?	•	Yes		No 🗌	Not Pres	ent 🗆			
Custody seals intact on shipping container/cooler	?	Yes		No 🗌	Not Pres	ent 🗆	Not Shipped		
Custody seals intact on sample bottles?		Yes		No 🗔	N/A			ŗ	
Chain of custody present?		Yes		No 🗌	·				
Chain of custody signed when relinquished and re	eceived?	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					·
Water - VOA vials have zero headspace?	No VOA vials sub	mitted		Yes 🗹	No				
Water - Preservation labels on bottle and cap ma	tch?	Yes		No 🗌	N/A				$\odot$
Water - pH acceptable upon receipt?		Yes		No 🗌	N/A	✓			
Container/Temp Blank temperature?			6°	4° C ± 2 Acc	ceptable				
COMMENTS:				lf given suffi	icient time to c	ool.			
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Client contacted	Date contacted:				Person contac	ted			
Contacted by:	Regarding								_
Comments									
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	QA / QC Package:	Std 🔲 Level 4 🔲	Other:	Project Name:	GAC 3-21-07	Project #:		Project Manager:	Cindy Hutado	Sampler Box Kraleon	Sample Temperature: 71.3 60	Preservative	Heal Number/volume HgCl <sub>2</sub> HNO <sub>3</sub> Hell 0703335	4-VOA X AU									Received By: (Signature) 3 (2010-7) - Amy o Received By: (Signature)
			<b>CUSTODY RECORD</b>	LAN REPUBLIC		CR 4590	Teld NN BY413			632-4161	112 - <del>2</del> 9/1		Watrix Sample I.U. No.	HOU EFF-1									Relinquished By: (Signature)
a and a			N-OF-	Dan J		#50	Junoo	-		505-	505-6		lime	815.7 815.7		· · · · · · · · · · · · · · · · · · ·							Time: <i>?</i> ,35 Time:
			CHAI	Client:		Address:	B			Phone #:	Fax #:		Late	3-21-07									Date: <b>3-21-07</b> Date:

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47.

• 12



#### COVER LETTER

Wednesday, April 11, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 4/03/07

Dear Cindy Hurtado:

Order No.: 0704053

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 4/4/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

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CLIENT:	San Juan Refining			Client Sample ID	Eff	 #1
Lab Order:	0704053			<b>Collection Date</b>	: 4/3/	2007 2:05:00 PM
Project:	GAC 4/03/07			Date Received	l: 4/4/	2007
Lab ID:	0704053-01			Matrix	: AQ	UEOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range C	Drganics (DRO)	ND	1.0	mg/L	1	4/4/2007 10:58:34 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	4/4/2007 10:58:34 PM
Surr: DNOP		114	58-140	%REC	1	4/4/2007 10:58:34 PM
EPA METHOD	8015B: GASOLINE RAI	NGE				Analyst: LMM
Gasoline Rang	e Organics (GRO)	0.071	0.050	mg/L	1	4/7/2007 9:20:29 PM
Surr: BFB		114	79.2-121	%REC	1	4/7/2007 9:20:29 PM
EPA METHOD	8021B: VOLATILES					Analyst: LMM
Benzene	,	14	1.0	μg/L	1	4/7/2007 9:20:29 PM
Toluene	•	ND	1.0	µg/L	1	4/7/2007 9:20:29 PM
Ethylbenzene		ND	1.0	µg/L	1	4/7/2007 9:20:29 PM
Xylenes, Total		ND	2.0	µg/L	1	4/7/2007 9:20:29 PM
Surr: 4-Brom	nofluorobenzene	89.7	70.2-105	%REC	1	4/7/2007 9:20:29 PM

Qualifiers:

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- Value exceeds Maximum Contaminant Level
- E Value above quantitation range

J Analyte detected below quantitation limits

- ND Not Detected at the Reporting Limit
  - Spike recovery outside accepted recovery limits 1 / 5
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

**Date:** 11-Åpr-07

RL Reporting Limit

Hall Envir	ronmental Analys	is Labora	tory, In	C. Dat	e: 11-Ap	pr-07
CLIENT:	San Juan Refining			Client Sample I	D: Eff #:	2
Lab Order:	0704053			<b>Collection Dat</b>	e: 4/3/2	007 2:15:00 PM
Project:	GAC 4/03/07			<b>Date Receive</b>	<b>d:</b> 4/4/2	007
Lab ID:	0704053-02			Matri	x: AQU	EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE				*	Analyst: SCC
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	4/4/2007 11:32:43 PM
Motor Oil Rang	ge Organics (MRO)	ND	5.0	mg/L	1	4/4/2007 11:32:43 PM
Surr: DNOP		126	58-140	%REC	1	4/4/2007 11:32:43 PM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: LMM
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	4/6/2007 10:29:23 PM
Surr: BFB		109	79.2-121	%REC	1	4/6/2007 10:29:23 PM
EPA METHOD	8021B: VOLATILES					Analyst: LMM
Benzene		ND	1.0	µg/L	1	4/6/2007 10:29:23 PM
Toluene		ND	1.0	µg/L	1	4/6/2007 10:29:23 PM
Ethylbenzene		ND	1.0	µg/L	1	4/6/2007 10:29:23 PM
Xylenes, Total		ND	2.0	µg/L	1	4/6/2007 10:29:23 PM
Surr 4-Bron	nofluorobenzene	86.8	70 2-105	%REC	1	4/6/2007 10:29:23 PM

Qualifiers:

Е Value above quantitation range

J Analyte detected below quantitation limits Not Detected at the Reporting Limit ND

S Spike recovery outside accepted recovery limits

2/5

В Analyte detected in the associated Method Blank

Н Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

Page 2 of 2

# **QA/QC SUMMARY REPORT**

Client: Sa Project: GA	n Juan Refin AC 4/03/07	ning						Work	<b>Order:</b> 0704053
Analyte		Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RPI	DLimit Qual
Method: SW8015 Sample ID: MB-12656		· · · · · · · · · · · · · · · · · · ·	MBLK			Batch I	D: <b>12656</b>	Analysis Date:	4/4/2007 8:40:44 PM
Diesel Range Organics Motor Oil Range Organi Sample ID: LCS-1265	(DRO) cs (MRO) 6	ND ND	mg/L mg/L LCS	1.0 5.0		Batch	D: <b>12656</b>	Analysis Date:	4/4/2007 9:15:09 PM
Diesel Range Organics Sample ID: LCSD-126	(DRO) 56	5.371	mg/L LCSD	1.0	107	74 Batch	157 D: <b>12656</b>	Analysis Date:	4/4/2007 9:49:34 PM
Method: SW8015 Sample ID: 0704053-0	(DRO) 02A MSD	5.576	MSD		108	Batch	ID: <b>R23139</b>	Analysis Date:	4/6/2007 11:29:22 PM
Gasoline Range Organi Sample ID: 5ML REA	cs (GRO) GENT BLA	0.4268	mg/L MBLK	0.050	82.6	80 Batch	115 ID: <b>R23139</b>	0.188 8. Analysis Date:	39 4/6/2007 9:30:14 AM
Gasoline Range Organi Sample ID: 5ML REA	cs (GRO) <b>GENT BLA</b>	ND	mg/L MBLK	0.050		Batch	ID: <b>R23144</b>	Analysis Date:	4/7/2007 3:11:02 PM
Gasoline Range Organi Sample ID: 2.5UG GF	cs (GRO) R <b>O LCS</b>	ND	mg/L LCS	0.050		Batch	ID: <b>R23139</b>	Analysis Date:	4/6/2007 11:42:13 AM
Gasoline Range Organi Sample ID: 2.5UG GF	ics (GRO) RO LCS	0.4978	mg/L LCS	0.050	99.6	80 Batch	115 ID: <b>R23144</b>	Analysis Date:	4/7/2007 5:11:52 PM
Gasoline Range Organi Sample ID: 0704053-	ics (GRO) 02A MS	0.4782	mg/L MS	0.050	95.6	80 Batch	115 ID: <b>R23139</b>	Analysis Date:	4/6/2007 10:59:21 P
Gasoline Range Organ	ics (GRO)	0.4260	mg/L	0.050	82.4	80	115		

#### Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S 3/5 recovery outside accepted recovery limits

Page 1

# **QA/QC SUMMARY REPORT**

Client:	
Project:	

San Juan Refining GAC 4/03/07

<b>Project:</b> GAC 4/03/07							W	ork Or	der:	0704053
Anaiyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLir	nit Qı	Jal
Method: SW8021							• • • •			
Sample ID: 0704053-02A MSD		MSD			Batch I	D: R23139	Analysis Dat	te: 4/	6/2007	11:29:22 PM
Benzene	5.442	μg/L	1.0	109	85.9	113	0.738	27		
Toluene	38.99	µg/L	1.0	100	86.4	113	1.02	19		
Ethylbenzene	7.522	µg/L	1.0	~ 100	83.5	118	0.240	10		
Xylenes, Total	44.23	µg/L	2.0	111	83.4	122	1.38	13		
Sample ID: 5ML REAGENT BLA		MBLK			Batch I	D: R23139	Analysis Dat	e:	4/6/200	7 9:30:14 AN
Benzene	ND	µg/L	1.0							
Toluene	ND	µg/L	1.0							
Ethylbenzene	ND	µg/L	1.0							
Xylenes, Total	ND	µg/L	2.0							
Sample ID: 5ML REAGENT BLA		MBLK			Batch I	D: R23144	Analysis Dat	te:	4/7/200	7 3:11:02 PN
Benzene	ND	µg/L	1.0							
Toluene	ND	µg/L	1.0							
Ethylbenzene	ND	µg/L	1.0							
Xylenes, Total	ND	µg/L	2.0							
Sample ID: 100NG BTEX LCS		LCS			Batch I	D: R23139	Analysis Dat	te: 4	6/2007	11:12:13 AM
Benzene	18.88	μg/L	1.0	94.4	85.9	113				
Toluene	19.42	µg/L	1.0	97.1	86.4	113				
Ethylbenzene	19.64	μg/L	1.0	98.2	83.5	118				
Xylenes, Total	59.10	µg/L	2.0	98:5	83.4	122				
Sample ID: 100NG BTEX LCS		LCS			Batch I	D: R23144	Analysis Da	te:	4/7/200	7 4:41:35 PN
Benzene	19.18	µg/L	1.0	95.9	85.9	113				
Toluene	19.60	μg/L	1.0	98.0	86.4	113				
Ethylbenzene	19.77	μg/L	1.0	98.9	83.5	118				
Xylenes, Total	59.26	µg/L	2.0	98.8	83.4	122				
Sample ID: 0704053-02A MS		MS			Batch I	D: R23139	Analysis Da	te: 4	/6/2007	10:59:21 PM
Benzene	5.402	µg/L	1.0	108	85.9	113				
Toluene	38.60	μg/L	1.0	99.0	86.4	113				
Ethylbenzene	7.504	μg/L	1.0	100	83.5	118				
Xylenes, Total	43.62	µg/L	2.0	109	83.4	122				
-										

Qualifiers:

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- Holding times for preparation or analysis exceeded Н
- ND Not Detected at the Reporting Limit

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 $\overset{\text{chile}}{4}$  recovery outside accepted recovery limits  $4\ /\ 5$ 

Sampl	e Receipt Che	ecklist			
Client Name SJR		Date and Time	Received	4/4/20	107
Work Order Number 0704053		Received by	GLS		
Checklist completed by	LH - Date	- 4-07	** **	·	
Matrix Carrier name	UPS				
Shipping container/cooler in good condition?	Yes 🗹	No	Not Present		
Custody seals intact on shipping container/cooler?	Yes	No 🗌	Not Present	Not Shipped	
Custody seals intact on sample bottles?	Yes	No 🗌	N/A		
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 🗌	ĩ		
All samples received within holding time?	Yes 🗹	No 🗌			
Water - VOA vials have zero headspace? No VOA vials su	bmitted	Yes 🗹	No		
Water - Preservation labels on bottle and cap match?	Yes	No 🗌	N/A 🔽		
Water - pH acceptable upon receipt?	Yes	No 🗌	N/A		
Container/Temp Blank temperature?	<b>4</b> °	4° C ± 2 Accept	able		
COMMENTS:		If given sufficien	it time to cool.		
		· · · · · · · · · · · · · · · · · · ·			
Client contacted Date contacted:		Per	son contacted	·····	
Contacted by: Regarding					
Commenter					
Comments.				<i></i>	
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Corrective Action				·····	
			<u> </u>   		
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IRDNMENTAL SLABORATORY S NE. Suite D Vew Mexico B7109 3975 Fax 505:345.4107 onmental.com	Air Bubbles or Headspace (Y or N)	
HALLENN ANALYSIE 4901 Hawkins Albuquerque, I Tel. 505. 345.0 www.hallenvirr	BTEX + MTBE + TAIB's (8021)         BTEX + MTBE + TPH (Gasoline Only)         BTEX + MTBE + TPH (Gasoline Only)         TPH Method 8015B (Gas/Diesel)         TPH (Method 504.1)         EDB (Method 504.1)         EDC (Method 504.1)         EDC (Method 504.1)         RCRA 8 Metals         Metals	Hemarks:
Dther: Project Name: Dther: Project Name:	Project #: Project Manager: Project Manager: Curder Hur Fad of Sample: Sample temperature: Mumber Volume Preservative HgCl_ HNO_	H-VOR HLU I H-VOR RLU Z Received By: (Signature) Received By: (Signature) Received By: (Signature) Heceived By: (Signature)
CHAIN-OF-CUSTODY RECORD Client: SAN Juen Letur	Address: $450$ Rond 4990 260mfold, NM 87413 Phone #: $505-632-4161$ Fax #: $505-632-391/$ Date Time Matrix Sample I.D. No.	40367 305 H2O EFF # / 40367 305 H2U EFF # / H2U EFF # Z Batel Time: Relinguished By: (Signeture) Date: Time: Melinquished By: (Signeture)

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#### COVER LETTER

Monday, April 23, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 4/16/07

Dear Cindy Hurtado:

Order No.: 0704251

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 4/18/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE ■ Suite D ■ Albuquerque, NM 87109 505.345.3975 ■ Fax 505.345.4107 www.hallenvironmental.com

CLIENT:	San Juan Refining	le ID: GAC	Eff #1					
Lab Order:	0704251			Date: 4/16/2	4/16/2007 11:00:00 AM			
Project:	GAC 4/16/07		eived: 4/18/2	4/18/2007				
Lab ID:	0704251-01			Μ	atrix: AQU	EOUS		
Analyses		Result	PQL	Qual Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC		
Diesel Range C	Drganics (DRO)	ND	1.0	mg/L	1	4/19/2007 9:47:19 PM		
Motor Oil Rang	e Organics (MRO)	ND	5.0	mg/L	1	4/19/2007 9:47:19 PM		
Surr: DNOP		121	58-140	%REC	1	4/19/2007 9:47:19 PM		
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB		
Gasoline Rang	e Organics (GRO)	0.11	0.050	mg/L	1 5	4/21/2007 1:54:28 AM		
Surr: BFB		112	79.2-121	%REC	1 .	4/21/2007 1:54:28 AM		
EPA METHOD	8021B: VOLATILES				l	Analyst: NSB		
Benzene		28	1.0	µg/L	1	4/21/2007 1:54:28 AM		
Toluene		ND	1.0	μg/L	1	4/21/2007 1:54:28 AM		
Ethylbenzene		ND	1.0	µg/L	1	4/21/2007 1:54:28 AM		
Xylenes, Total		ND	2.0	μg/L	1	4/21/2007 1:54:28 AM		
Surr: 4-Bron	nofluorobenzene	89.5	70.2-105	%REC	1	4/21/2007 1:54:28 AM		

Qualifiers:

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Value exceeds Maximum Contaminant Level

Analyte detected below quantitation limits

Spike recovery outside accepted recovery limits

Not Detected at the Reporting Limit

Value above quantitation range

Date: 23-Apr-07

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

1/4

Page 1 of 2

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Date: 23-Apr-07

CLIENT:	San Juan Refining		GAC Eff #2						
Lab Order:	0704251	Collection Date:					4/16/2007 11:05:00 AM		
Project:	GAC 4/16/07	Date Received:				4/18/2007			
Lab ID:	0704251-02				Matrix:	AQU	EOUS		
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE		· · · · · · · · · · · · · · · · · · ·		······································		Analyst: SCC		
Diesel Range (	Drganics (DRO)	ND	1.0		mg/L	1	4/19/2007 10:21:47 PM		
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L	1	4/19/2007 10:21:47 PM		
Surr: DNOP		123	58-140		%REC	1	4/19/2007 10:21:47 PM		
EPA METHOD	8015B: GASOLINE RAN	GE					Analyst: NSB		
Gasoline Rang	e Organics (GRO)	ND	0.050		mg/L	1	4/21/2007 2:24:22 AM		
Surr: BFB		111	79.2-121		%REC	1	4/21/2007 2:24:22 AM		
EPA METHOD	8021B: VOLATILES						Analyst: <b>NS</b> B		
Benzene		ND	1.0		µg/L	1	4/21/2007 2:24:22 AM		
Toluene		ND	1.0		µg/L	1	4/21/2007 2:24:22 AM		
Ethylbenzene		ND	1.0		µg/L	1	4/21/2007 2:24:22 AM		
Xylenes, Total		ND	2.0		µg/L	1	4/21/2007 2:24:22 AM		
Surr: 4-Brom	nofluorobenzene	87.6	70.2-105		%REC	1	4/21/2007 2:24:22 AM		







\* Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

RL Reporting Limit

2/4

**Date:** 23-Apr-07

# QA/QC SUMMARY REPORT

Client: San Juan Refi Project: GAC 4/16/07	ning						Worl	<b>x Order:</b> 0704251
Analyte	Result	Units	PQL	%Rec	LowLimit Highl	_Imit	%RPD RF	PDLimit Qual
Method: SW8015						1		
Sample ID: MB-12765		MBLK			Batch ID:	12765	Analysis Date:	4/19/2007 8:04:08 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0					
Motor Oil Range Organics (MRO)	ND	mg/L	5.0				}	
Sample ID: LCS-12765		LCS			Batch ID:	12765	Analysis Date:	4/19/2007 8:38:31 PM
Diesel Range Organics (DRO)	4.783	mg/L	1.0	95.7	74 157	,		
Sample ID: LCSD-12765		LCSD			Batch ID:	12765	Analysis Date:	4/19/2007 9:12:55 PM
Diesel Range Organics (DRO)	5.149	mg/L	1.0	103	74 157	• .	7.37	23
Method: SW8015								
Sample ID: 5ml rb-II 24		MBLK			Batch ID: F	R23317	Analysis Date:	4/20/2007 8:23:53 PM
Gasoline Range Organics (GRO)	ND	mg/L	0.050					
Sample ID: 2.5UG GRO LCS-II		LCS			Batch ID: F	R23317	Analysis Date:	4/21/2007 6:09:47 PM
Gasoline Range Organics (GRO)	0.4208	mg/L	0.050	84.2	80 115	5		
Method: SW8021								
Sample ID: 5ML RB-II		MBLK			Batch ID:	R23317	Analysis Date:	4/20/2007 8:23:53 PM
Benzene	ND	ua/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: 5ML RB-III		MBLK			Batch ID:	R23317	Analysis Date:	4/21/2007 10:35:58 Al
Benzene	ND	µg/L	1.0					
Toluene	ND	µg/L	1.0					
Ethylbenzene	ND	µg/L	1.0					
Xylenes, Total	ND	µg/L	2.0					
Sample ID: 100NG BTEX LCS-II		LCS			Batch ID:	R23317	Analysis Date:	4/21/2007 2:54:23 AM
Benzene	18.80	µg/L	1.0	94.0	85.9 11	3.		
Toluene	19.18	µg/L	1.0	95.9	86.4 11	3		
Ethylbenzene	19.30	µg/L	1.0	96.5	83.5 11	8		
Xylenes, Total	57.44	µg/L	2.0	95.7	83.4 12	2		
Sample ID: 100NG BTEX LCS-III		LCS			Batch ID:	R23317	Analysis Date:	4/21/2007 4:39:25 PM
Benzene	18.62	hð\r	1.0	93.1	- 85.9 11	3		
Toluene	19.04	µg/L	1.0	95.2	86.4 11	3		
Ethylbenzene	19.13	hð/r	1.0	95.6	83.5 11	8		
Xylenes, Total	56.54	hð\r	2.0	94.2	83.4 12	2		
Sample ID: 100NG BTEX LCSD-I		LCSD			Batch ID:	R23317	Analysis Date	: 4/21/2007 5:09:27 PM
Benzene	18.92	µg/L	1.0	94.6	85.9 11	3	1.56	27
Toluene	19.27	µg/L	1.0	96.4	86.4 11	3	1.18	19
Ethylbenzene	19.29	µg/L	1.0	96.5	83.5 11	8	0.864	10
Xylenes, Total	57.53	µg/L	2.0	95.9	83.4 12	22	1.73	13



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RPD outside accepted recovery limits

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	Sample	Receipt Ch	ecklist			
Client Name SJR			Date and Time	Received:		4/18/2007
Work Order Number 0704251			Received by	TLS		
Checklist completed by anya Thom	n	APIP Date	18,07			
Matrix	Carrier name	UPS				
Shipping container/cooler in good condition?		Yes 🔽	No 🗌	Not Present		
Custody seals intact on shipping container/cooler?		Yes 🗹	No 🗌	Not Present		Not Shipped
Custody seals intact on sample bottles?		Yes 🗌	No 🗔	N/A	$\checkmark$	
Chain of custody present?		Yes 🗹	No 🗌			
Chain of custody signed when relinquished and rece	ived?	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 🗌			
Water - VOA vials have zero headspace?	o VOA vials subr	nitted	Yes 🗹	No	}	
Water - Preservation labels on bottle and cap match	?	Yes	No 🗔	N/A 🗹	]	
Water - pH acceptable upon receipt?		Yes	No	N/A	]	
Container/Temp Blank temperature?		1°	4° C ± 2 Accepta	able		
COMMENTS:			If given sufficien	t time to cool.		
Client contacted Da	te contacted:		Pers	son contacted		
Contacted by: Re	garding					
Commonts:						
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<b>ITAL</b> <b>TORY</b> 109 5.345.4107						-							· · · · · ·							
<b>NEN</b> <b>NEN</b> 8 0 87 8 507 8 207		5L				()	∕0 <b>\-i</b> u	i92) (	8571											
<b>ABC</b> ABC Mexic Dexid							(YO	V) 80	856					 						
IS NE New 3971				185) 185)	י רט <sub>אי</sub> 18) אין	ארט ארט ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אי אין ארט ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין ארט אין	on , nu ricides	i Pesi	10111A 1808					 						
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C Package: Level 4	4/16/07				brtado	kow	/ e	ervative	NO <sub>3</sub> OTO4 25,	kc	HC 2								rily line	Bure)
	2-				H	2ª		Prese	CI <sub>2</sub> HI									<u> </u>	(Signe	(Signe
Std Std	1C			::	nde		ature:		E Hg										ed By:	:∭ape
Other: Project Name	$\mathcal{O}$	Project #:		Project Manage		Sampler: BU	Sample Temper		I INUMBERY VOIUM	3-VOA	3-104								Receive	Receive
DYRECORD		90	MN			1/10/	116		Sample I.D. No.	GAC EFF #1	GAC EFF # 2								1 By: (Signature)	I By: (Signature)
		Rd 49.	Field.	1413		632-4	632-3		Matrix	H70	) <del>(</del>	) ) 							Relinquisher	Relinquished
		#50	Bloom	6,		595-	505-		a	1/Am	IDSAn								Time: 8/2a	Time:
Client:		Address:				Phone #:	Fax #:		Late	20/10/12	tolol H								HIT OF	Date:



#### COVER LETTER

Thursday, May 03, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC

Dear Cindy Hurtado:

#### Order No.: 0704400

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 4/26/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

		· · · · · · · · · · · · · · · · · · ·						
CLIENT:	San Juan Refining			C	lient Sample ID:	Eff-	1	
Lab Order:	0704400				<b>Collection Date:</b>	4/25	/20	07 11:10:00 AM
Project:	GAC				Date Received:	4/26	/20	07
Lab ID:	0704400-01				Matrix:	AQU	ΰEα	OUS
Analyses		Result	PQL	Qual	Units	DF	j	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE							Analyst: SCC
Diesel Range (	Drganics (DRO)	ND	1.0		mg/L	1	;	5/1/2007 11:26:30 AM
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L	1		5/1/2007 11:26:30 AM
Surr: DNOP		123	58-140		%REC	1	:	5/1/2007 11:26:30 AM
EPA METHOD	8015B: GASOLINE RAN	GE			· ·		1	Analyst: NSB
Gasoline Rang	e Organics (GRO)	0.074	0.050		mg/L	1	1	4/26/2007 11:28:59 PM
Surr: BFB		114	79.2-121		%REC	1	;	4/26/2007 11:28:59 PM
EPA METHOD	8021B: VOLATILES						i	Analyst: NSB
Benzene		14	1.0		µg/L	1		4/26/2007 11:28:59 PM
Toluene		ND	1.0		µg/L	1	Į.	4/26/2007 11:28:59 PM
Ethylbenzene		ND	1.0		µg/L	1		4/26/2007 11:28:59 PM
Xylenes, Total		ND.	2.0		µg/L	1	ļ	4/26/2007 11:28:59 PM
Surr: 4-Bron	nofluorobenzene	89.1	70.2-105		%REC	1	1	4/26/2007 11:28:59 PM

Qualifiers:

\* E

J ND

S

Date: 03-May-07

в	Analyte detected in the associated Method Blank
~	

- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant/Level
- RL Reporting Limit

Page 1 of 2

1 / 4

Value exceeds Maximum Contaminant Level

Analyte detected below quantitation limits

Spike recovery outside accepted recovery limits

Not Detected at the Reporting Limit

Value above quantitation range

V

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0704400 GAC 0704400-02			Client Sample I Collection Dat Date Receive Matri	<ul> <li>D: Eff-2</li> <li>ae: 4/25/2</li> <li>d: 4/26/2</li> <li>x: AQU2</li> </ul>	2007 11:00:00 AM 2007 EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE					Analyst: SCC
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	5/1/2007 12:01:11 PM
Motor Oil Rang	ge Organics (MRO)	ND	5.0	mg/L	1	5/1/2007 12:01:11 PM
Surr: DNOP		117	58-140	%REC	1	5/1/2007 12:01:11 PM
EPA METHOD	8015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	4/26/2007 11:58:57 PM
Surr: BFB		113	79.2-121	%REC	1	4/26/2007 11:58:57 PM
EPA METHOD	8021B: VOLATILES					Analyst: NSB
Benzene		ND	1.0	µg/L	1	4/26/2007 11:58:57 PM
Toluene		ND	1.0	µg/L	1	4/26/2007 11:58:57 PM
Ethylbenzene		ND	1.0	µg/L	1	4/26/2007 11:58:57 PM
Xylenes, Total		ND	2.0	μg/L	1	4/26/2007 11:58:57 PM
Surr: 4-Bron	nofluorobenzene	88.0	70.2-105	%REC	1	4/26/2007 11:58:57 PM

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Date: 03-May-07

- Qualifiers: \*
  - Value exceeds Maximum Contaminant Level
  - E Value above quantitation range
  - J Analyte detected below quantitation limits
  - ND Not Detected at the Reporting Limit
  - S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

2/4

# QA/QC SUMMARY REPORT

Client: San J	uan Refining						
Project: GAC						Work	<b>Order:</b> 0704400
Analyte	Result	Units	PQL	%Rec	LowLimit HighLimit	%RPD RP	DLimit Qual
Method: SW8015						nun han an	
Sample ID: MB-12841		MBLK			Batch ID: 12841	Analysis Date:	5/1/2007 9:43:01 AM
Diesel Range Organics (DF	RO) ND	mg/L	1.0			,	
Motor Oil Range Organics (	MRO) ND	mg/L	5.0				
Sample ID: LCS-12841		LCS			Batch ID: 12841	Analysis Date:	5/1/2007 10:17:23 AM
Diesel Range Organics (DR	RO) 5.138	mg/L	1.0	103	74 157	i	
Sample ID: LCSD-12841		LCSD			Batch ID: 12841	Analysis Date:	5/1/2007 10:40:36 AM
Diesel Range Organics (DF	RO) 5.250	mg/L	1.0	105	74 157	2.16 2	23
Method: SW8015							
Sample ID: 5ML REAGE	NT BLA	MBLK			Batch ID: R2337	Analysis Date:	4/26/2007 9:26:05 AM
Gasoline Range Organics (	GRO) ND	mg/L	0.050				
Sample ID: 2.5UG GRO I	_CS	LCS			Batch ID: R23375	Analysis Date:	4/26/2007 8:58:36 PM
Gasoline Range Organics (	GRO) 0.4986	mg/L	0.050	94.4	80 115		
Method: SW8021							
Sample ID: 5ML REAGE		MBLK			Batch ID: R2337	Analysis Date:	4/26/2007 9:26:05 AM
Benzene	ND	µg/L	1.0			1	
Toluene	ND	µg/L	1.0				
Ethylbenzene	ND	µg/L	1.0				
Xylenes, Total	ND	µg/L	2.0				
Sample ID: 100NG BTEX	LCS	LCS			Batch ID: R2337	5 Analysis Date:	4/26/2007 6:58:00 P
Benzene	18.93	µg/L	1.0	94.6	85.9 113	i	
Toluene	19.52	µg/L	1.0	97.6	86.4 113	2	
Ethylbenzene	19.78	µg/L	1.0	98.9	83.5 118	ł	
Xylenes, Total	59.08	µg/L	2.0	98.5	83.4 122	- 1	
						1	

- Qualifiers:
- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
  - Not Detected at the Reporting Limit

ND

S Spike recovery outside accepted recovery limits 3/4

Page 1

Hall	Environmental	Analy	sis Lal	boratory,	Inc.

	Sample Receipt Ch	ecklist		
Client Name SJR		Date and Tim	e Received:	4/26/2007
Work Order Number 0704400		Received by	y TLS	
Checklist completed by Shoni	Addr Date	رم <sup>1</sup> مر		
Matrix Carri	er name <u>UPS</u>			
Shipping container/cooler in good condition?	Yes 🔽	No	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🔽	No 🗔	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes	No 🗌	N/A	
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 🗌		
Water - VOA vials have zero headspace? No VOA	vials submitted	Yes 🗹	No 🗌	
Water - Preservation labels on bottle and cap match?	Yes	No 🗔	N/A 🔽	
Water - pH acceptable upon receipt?	Yes	No 🗔	N/A 🔽	
Container/Temp Blank temperature?	4°	4° C ± 2 Accep	table	
COMMENTS:		If given sufficier	nt time to cool.	
	· ···· ···· ···· ···· ···· ····			
Client contacted Date contact	acted:	Pe	rson contacted	
Contacted by: Regarding				
				·····
Comments:				······
				- -
	-			
				······································
				,
Corrective Action				

4/4

HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D Albuquerque, New Mexico 87109	Tel. 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com		)iesel) 7 or N)	d 8015B (Gas/I od 418.1) od 504.1) tals tals tals (I_VOA) cides / PCB's (8 cides / PCB's (8	Methon Methor (119M) HqT (119M) H							
QA / GC Package: Std 🔲 Level 4 🔲 Other:	Project Name:	Project #:	Project Manager:	Sampler: Bob K, A K O (1997)	Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> HCI CT CT CULX BIEX	FLOA X IX	3.10A × 2×				Received By: (Signature) 4/Zu /o 7 Remarks	(Redeived By: (Sighature)
CHAIN-OF-CUSTODV RECORD	Client: SAN JUAN REFINING	Address # 50 Rd 4990	15/00m5ield, NM 87413	Phone #: 505-632 - 4/6/ Fax #: 505-632 - 3911	Date Time Matrix Sample I.D. No.	4-25-07 11:10 H20 EFF-1	425-07 11:00 H2O Eff-2				Date: Time: Relinquished By (Signature) 4-25-07 1:45 2066 2.206	Date: Time: Relinquished By: (Signature)



#### COVER LETTER

Thursday, May 10, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC

Dear Cindy Hurtado:

Order No.: 0705063

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 5/3/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

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Date: 10-May-07

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0705063 GAC 0705063-01			Client Sample Collection Da Date Receiv Mate	ID: GAC- ate: 5/2/20 red: 5/3/20 rix: AQΨF	B 007 8:33:00 AM 007 EOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8	015B: DIESEL RANGE					Analyst: SCC
Diesel Range Org	janics (DRO)	ND	1.0	mg/L	1	5/9/2007 10:45:27 AM
Motor Oil Range	Organics (MRO)	ND	5.0	mg/L	1	5/9/2007 10:45:27 AM
Surr: DNOP		120	58-140	%REC	1	5/9/2007 10:45:27 AM
EPA METHOD 8	015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Range	Organics (GRO)	ND	0.050	mg/L	1	5/4/2007 12:30:39 PM
Surr: BFB		115	79.2-121	%REC	1	5/4/2007 12:30:39 PM
EPA METHOD 8	021B: VOLATILES					Analyst: NSB
Benzene		ND	1.0	µg/L	1	5/4/2007 12:30:39 PM
Toluene		ND	1.0	µg/L	1	5/4/2007 12:30:39 PM
Ethylbenzene		ND	1.0	µg/L	1	5/4/2007 12:30:39 PM
Xylenes, Total		ND	2.0	µg/L	1	5/4/2007 12:30:39 PM
Surr: 4-Bromo	fluorobenzene	88.5	70.2-105	%REC	1	5/4/2007 12:30:39 PM

Qualifiers:

\*

- Value exceeds Maximum Contaminant Level
- E Value above quantitation range
- ·ј Analyte detected below quantitation limits
- Not Detected at the Reporting Limit ND
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- RL
  - Reporting Limit

1/3

Page 1 of 1



1

## **QA/QC SUMMARY REPORT**

<b>Project:</b> GAC	ming						Wo	rk O	rder: 0705063
Analyte	Result	Units	PQL	%Rec	LowLimit Hig	hLimit	%RPD F	RPDL	imit Qual
Method: SW8015		144			14 VA ANNO				
Sample ID: MB-12887		MBLK			Batch ID:	12887	Analysis Date	2	5/9/2007 9:03:08 AM
Diesel Range Organics (DRO)	ND	mg/L	1.0						
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-12887		LCS			Batch ID:	12887	Analysis Date	21	5/9/2007 9:37:14 AM
Diesel Range Organics (DRO)	5.077	mg/L	1.0	102	74 15	57			
Sample ID: LCSD-12887		LCSD			Batch ID:	12887	Analysis Date	9:	5/9/2007 10:11:19 AM
Diesel Range Organics (DRO)	4.826	mg/L	1.0	96.5	74 1	57	5.08	23	
Method: SW8015									
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID:	R23473	Analysis Date	2	5/4/2007 8:54:18 AM
Gasoline Range Organics (GRO)	ND	ma/L	0.050						
Sample ID: 2.5UG GRO LCS		LCS			Batch ID:	R23473	Analysis Date	:	5/4/2007 6:32:01 PM
Gasoline Range Organics (GRO)	0 4776	ma/l	0.050	92.2	80 1	15			
Sample ID: 2.5UG GRO LCSD	011170	LCSD	0.000	01.1	Batch ID:	R23473	Analysis Date	e:	5/4/2007 7:02:09 PM
Gasoline Range Organics (GRO)	0.4738	mg/L	0.050	91.4	80 1	15	0.799	8.39	
Method: SN/9021	······································								
Sample ID: 5MI REAGENT BLA		MRIK			Batch ID:	P23473	Analysis Date	<u>م</u> .	5/4/2007 8·54·18 AM
					Daten iD.	1120410	Analysis Date	<i>.</i> .	5/4/2007 0.54.107 W
Taluana		µg/L	1.0						
Toluene thylbopzopo		µg/L	1.0						
Xylenes Total		µg/∟ vo/l	2.0						
Sample ID: 100NG BTEX LCS	NU	105	2.0		Batch ID:	R23473	Analysis Date	<i>z</i> .	5/4/2007 1:30:50 PM
Benzeno	18.60	200	10	03.0	95.0 1	12	, and your but		0, 112007 1.00100 1 1.
Toluepe	19.31	р <u>9</u> /с uo/i	1.0	96.5	86.4 1	13			
Ethylbenzene	19.67	ug/l	1.0	98.3	83.5 1	18			
Xylenes, Total	58.34	μg/L	2.0	97.2	83.4 1	22			
Sample ID: 100NG BTEX LCSD		LCSD			Batch ID:	R23473	Analysis Date	9:	5/4/2007 2:00:51 PM
Benzene	18.64	ua/L	1.0	93.2	85.9 1	13	0.226	27	
Toluene	19.27	μg/L	1.0	96.4	86.4 1	13	0.187	19	
Ethylbenzene	19.57	μg/L	1.0	97.8	83.5 1	18	0.500	10	
Xylenes, Total	58.14	µg/L	2.0	96.9	83.4 1.	22	0.343	13	
					-				

- Qualifiers:
  - E Value above quantitation range
  - J Analyte detected below quantitation limits
  - R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits 2/3

Page 1

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			· · · ·		
Hall Environmental Analysis	Laboratory, Inc.				
· · · · · ·	Sampl	ie Receipt Ch	ecklist	ì	
Client Name SJR			Date and Tin	ne Received:	5/3/2007
Work Order Number 0705063		,	Received Ł	by TLS	
· · · · · · · · · · · · · · · · · · ·	-		0.1		
Checklist completed by	<u>}</u>	Date	430	)	
Matrix	Carrier name	> <u>UPS</u>		,	
Shipping container/cooler in good condition	?	Yes 🔽	No 🗌	Not Present	
Custody seals intact on shipping container/	cooler?	Yes 🗹	No 🗌	Not Present	Not Shipped
Custody seals intact on sample bottles?		Yes 🗌	No 🗌	N/A 🗹	
Chain of custody present?		Yes 🗹	No 🗌		
Chain of custody signed when relinquished	and received?	Yes 🗹	No 🗌	<b>:</b> • .	
Chain of custody agrees with sample labels	s?	Yes 🗹	No 🗌	ļ	
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 🗌		
Water - VOA vials have zero headspace?	No VOA vials su	Ibmitted	Yes 🗹	No	·
Water - Preservation labels on bottle and c	ap match?	Yes 🗌	No 🗌	N/A	
Water - pH acceptable upon receipt?		Yes	No 🗌	N/A	•
Container/Temp Blank temperature?		14°	4° C ± 2 Acce	ptable	
COMMENTS:			If given suffici	ent time to cool.	-
			•		
			· · · · · · · · · · · · · · · · · · ·		·····
					· · ·
Client contacted	Date contacted:		P	erson contacted	•
Contacted by:	Regarding				
Comments:					• • • • • • • • • • • • • • • • • • • •
			·		n
······					
···					
Corrective Action					
	· · · · · ·			· · · · · · · · · · · · · · · · · · ·	· ·· ··· ·· ·· ···
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		- · - ·		1	

	(N no Y) eseqebeeH no selddu8 niA		
ENTAL LATORY B7109 505.345.4107 m	(AUV-IM92) U\58		
NAME Name Lake Lake Lake Lake Lake Lake Lake Lak	8260B (VOA)		
	8081 Pesticides / PCB's (8082)		
enviro	Anion (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )		
21 Ha D1 Ha 505.50 w. halli	(HAY 70 ANY) UTE8 		
Alb Alb	EDC (Method 8021)		
	EDB (Method 504.1)		
	TPH (Method 418.1)		
	BTEX + MTBE + TPH (Gasoline Only) 	<u>بخ</u>	
	BTEX + 17 (8021)	Bemar	
Dther: Project Name: Project #:	Project Manager: Sampler: Kr. A. Ko. Sample Temperature: Kr. A. Ko. Sample Temperature: K. A. Ko. Number/Volume Preservative HEAL No.	3- 12名 X 人 A A Begeived By: (Signature) 5(3107)	Redeived By: (Signature)
CUSTODY RECORD LAN Refining	22-416/ Nr. 87413 32-416/ 32-391/ Matrix Sample I.D. No.	Had Gree-B Petitinguished By: (Signature)	NCORENTATION Relinquished By: (Signature)
HEO CHI	Time 585 -6	So 3	<b>8:50</b> Time:
Address: ≮	Phone # Fax #: Date	<i>S</i> -Cシン	5-2-e7 Date:

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#### COVER LETTER

Thursday, May 17, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 5/9/07

Order No.: 0705154

Dear Cindy Hurtado:

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 5/11/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENT:	San Juan Refining			С	lient Sa	mple ID:	GAC-	В
Lab Order:	ab Order:0705154Collection Date:roject:GAC 5/9/07Date Received:				5/9/2007 1:45:00 PM			
Project:					Received:	5/11/2007		
Lab ID:	0705154-01				Matrix:		AQUEOUS	
Analyses		Result	PQL	Qual	Units		DF	Date Analyzed
EPA METHOD	8015B: DIESEL RANGE						1	Analyst: SCC
Diesel Range C	Organics (DRO)	ND	1.0		mg/L		1	5/15/2007 7:05:38 PM
Motor Oil Rang	e Organics (MRO)	ND	5.0		mg/L		1	5/15/2007 7:05:38 PM
Surr: DNOP		117	58-140		%REC		1	5/15/2007 7:05:38 PM
EPA METHOD	8015B: GASOLINE RANG	θE						Analyst: NSB
Gasoline Rang	e Organics (GRO)	ND	0.050		mg/L		1	5/14/2007 2:58:26 PM
~ Surr: BFB	- · · ·	121	79.2-121	S	%REC		1	5/14/2007 2:58:26 PM
EPA METHOD	8021B: VOLATILES							Analyst: <b>NSB</b>
Benzene		ND	1.0		µg/L		1	5/14/2007 2:58:26 PM
Toluene		ND	1.0		µg/L		1	5/14/2007_2:58:26 PM
Ethylbenzene		ND	1.0		µg/L		1	5/14/2007 2:58:26 PM
Xylenes, Total		ND	2.0		µg/L		1	5/14/2007 2:58:26 PM
Surr: 4-Brom	nofluorobenzene	92.7	70.2-105		%REC		1	5/14/2007 2:58:26 PM

Date: 17-May-07

Value exceeds Maximum Contaminant Level Value above quantitation range

1/3

Ε J, Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

Qualifiers:

\*

S

- Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Holding times for preparation or analysis exceeded Н
- MCL Maximum Contaminant Level
- RL Reporting Limit

## **QA/QC SUMMARY REPORT**

Client: San Ju	an Refining							
<b>GAC</b> S	5/9/07			•			Work	<b>Order:</b> 0705154
Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD RF	DLimit Qual
Method: SW8015		MDIK			Patab	12022	Apolycic Doto:	5/15/2007 2:04:20 PM
Sample ID. MD-12952		WDLN			Datur	12932	Analysis Date.	5/15/2007 5.04.59 FW
Diesel Range Organics (DRC	D) ND	mg/L	1.0					
Motor Oil Range Organics (N	ARO) ND	mg/L	5.0		Detek	10000		5/45/0007 0:00:45 DM
Sample ID: LCS-12932		LUS			Batch	ID: 12932	Analysis Date:	5/15/2007 3:39:15 PM
Diesel Range Organics (DRC	D) 4.810	mg/L	1.0	96.2	74	157		
Sample ID: LCSD-12932		LCSD			Batch	ID: <b>12932</b>	Analysis Date:	5/15/2007 4:13:40 PM
Diesel Range Organics (DRO	D) 4.860	mg/L	1.0	97.2	74	157	1.03	23
Method: SW8015								
Sample ID: 5ML REAGEN	T BLA	MBLK	,		Batch	ID: <b>R23590</b>	Analysis Date:	5/14/2007 8:19:39 AM
Gasoline Range Organics (G	RO) ND	mg/L	0.050					
Sample ID: 2.5UG GRO LO	cs	LCS			Batch	ID: R23590	Analysis Date:	5/14/2007 5:04:15 PM
Gasoline Range Organics (G	GRO) 0.4702	ma/L	Ó.050	91 1	80	115		
Sample ID: 2.5UG GRO LO	CSD	LCSD	0.000	01.1	Batch	ID: R23590	Analysis Date:	5/14/2007 5:34:20 PM
Gasoline Range Organics (G	 RO) 0.4792	ma/i	0.050	92.9	80	115	1 90 8	39
						110	0	
Method: SW8021	TRIA	MRLK			Ratch	ID: 023500	Apolysis Doto:	5/14/2007 8·10·30 AM
		well.	1.0		Datch	ID. <b>N23330</b>	Analysis Date.	5/14/2007 8.19.59 AM
Benzene	ND	pyrc ug/l	1.0					
oluene		µg/L	1.0					
Xulones Total	ND	µg/L	2.0					
Sample ID: 100NG BTEX		105	2.0		Batch	D. 223500	Analysis Data:	5/11/2007 0.50.01 AM
Dampie ID: TUGINO DTEXT	10.05	200	1.0	00.0	Daton	10. 120000	Analysis Date.	J/14/2007 3.30.01 AM
Benzene	19.25	µg/L	1.0	96.2	85.9	113		
Toluene	19.55	µg/L	1.0	97.7	86.4	113		
	59.00	µg/∟ vo//	1.0	90.3	03.5 02.4	118		
Sample ID: 100NG BTEX	30.03	LCS	2.0	97.7	00.4 Ratch	122	Applyrain Data:	5/11/2007 2:59:46 DN
Sample ID. TUUNO BIEX					Daton	ID. <b>K23590</b>	Analysis Dale.	5/14/2007 5.56.40 FW
Benzene	19.65	µg/L	1.0	98.2	85.9	113		
Toluene	19.76	µg/L	1.0	98.8	86.4	113		
Ethylpenzene	20.01	µg/∟	1.0	100	83.5	118		
Sample ID: 100NG BTEY	59.00	µg/⊑ LCSD	2.0	96.4	83.4 Rotob	122	Apolysia Data	514 AU0007 A.04-04 DA
	10.00	L000		07.0	Daton	ID. RZ3390	Analysis Date:	3/14/2007 4:31.21 PN
Benzene	19.56	µg/L	1.0	97.8	85.9	113	0.449	27
	19.69	µg/L	1.0	98.4	86.4	113	0.385	19
	19.80	µg/∟ ug/t	1.0	99.0	83.5	100	1.04	10
Aylenes, Tulal	20.02	µy/L	2.0	90.0	03.4	122	0.414	13

Qualifiers:

Е Value above quantitation range

Analyte detected below quantitation limits J

R RPD outside accepted recovery limits

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit

S

Since recovery outside accepted recovery limits 2/3

	Sample	Receipt Che	cklist		
Client Name SJR			Date and Tim	e Received:	5/11/2007
Work Order Number 0705154			Received by	y TLS	
Checklist completed by Janya SL		May	11,07		
Matrix	Carrier name	Greyhound		i	
Shipping container/cooler in good condition?		Yes 🔽	No 🗌	Not Present	l .
Custody seals intact on shipping container/cooler	?	Yes 🗹	No 🗌	Not Present /	Not Shipped
Custody seals intact on sample bottles?		Yes 🗌	No 🗌	N/A	
Chain of custody present?		Yes 🗹	No 🗌		
Chain of custody signed when relinquished and r	eceived?	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 🗆		•
Water - VOA vials have zero headspace?	No VOA vials sub	mitted	Yes 🗹	No	
Water - Preservation labels on bottle and cap ma	atch?	Yes	No 🗌	N/A 🔽	
Water - pH acceptable upon receipt?		Yes	No 🗌	N/A	
Container/Temp Blank temperature?		<b>8</b> °	4° C ± 2 Accep	otable	
COMMENTS:			If given sufficie	nt time to cool.	
					· .
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Client contacted	Date contacted:		Ρε	erson contacted	
Contacted by:	Regarding				
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Comments:					
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Corrective Action			· ·		
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	bbles or Headspace (Y or N)	n8 niA	
VIRONMENTAL S LABORATORY s NE, Suite D New Mexico 87109 3975 Fax 505.345.410 onmental.com	(\$308) 2'80's (\$308) Pesticides / PCB's (\$308) 3 (YOD) (AOV-im92)	8081	
HALL EN ANALYSI 4901 Hawkin Albuquerque, Tel. 505.345, www.hallenvir	Aethod 8021) (PAA or PAA) 8 Metals 8 Metals	8310 8310 80000	
	+ MTBE + TPH (Gasoline Only) lethod 8015B (Gas/Diesel) Method 418.1) Vethod 504.1)	- ХЭТВ 10 Н9Т М Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 Н9Т 70 70 Н9Т 70 70 70 Н9Т 70 70 70 70 70 70 70 70 70 70 70 70 70	marks:
Dther: Broject Name: Broject N	Project Manager: Project Manager: Sampler: B K P A & S Sample Temperature: So Preservative	Number/Volume HgCl <sub>2</sub> HNO <sub>3</sub> H/Cl OTOSTSU HEAL No.	Repeived By: (Signature) - 5/11/67 Re MMU 0: (Signature) - 5/11/67 Re
<b>: CUSTODY RÉCORD</b> LAN RECINNY	CR 4990 Geld, NM 87413 -632 - 4/61 -632 - 3911	Matrix Sample I.D. No.	Relinquished By: (Signature)
Client: SAU	Fax #: 505-	Date Time	Date: Time: S-9-07 2:45 Date: Time:

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#### COVER LETTER

Wednesday, May 23, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC- 5/15/07

Dear Cindy Hurtado:

Order No.: 0705220

Hall Environmental Analysis Laboratory, Inc. received 1 sample(s) on 5/16/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001



4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 Fax 505.345.4107 www.hallenvironmental.com

CLIENT: Lab Order: Project: Lab ID:	San Juan Refining 0705220 GAC- 5/15/07 0705220-01			Client Sample ID Collection Date Date Received Matrix	9: GAQ 9: 5/15/ 1: 5/16/ 4: AQU	C-B /2007 12:15:00 PM /2007 JEOUS
Analyses		Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD 8	015B: DIESEL RANGE					Analyst: SCC
Diesel Range Or	ganics (DRO)	ND	1.0	mg/L_	1	5/22/2007 8:50:51 PM
Motor Oil Range	Organics (MRO)	ND	5.0	mg/L	1	5/22/2007 8:50:51 PM
Surr: DNOP	*.	118	58-140	%REC	1	5/22/2007 8:50:51 PM
EPA METHOD 8	015B: GASOLINE RAN	GE				Analyst: NSB
Gasoline Range	Organics (GRO)	ND	0.050	mg/L	1	5/16/2007 8:34:41 PM
Surr: BFB		109	79.2-121	%REC	1	5/16/2007 8:34:41 PM
EPA METHOD 8	021B: VOLATILES					Analyst: NSB
Benzene		ND	1.0	µg/L	1	5/16/2007 8:34:41 PM
Toluene	,	ND	1.0	µg/L	1	5/16/2007 8:34:41 PM
Ethylbenzene		ND	1.0	µg/L	1	5/16/2007 8:34:41 PM
Xylenes, Total		ND	2.0	µg/L	1	5/16/2007 8:34:41 PM
-Surr: 4-Bromo	fluorobenzene	. 84.3	70.2-105	%REC	1	5/16/2007 8:34:41 PM

Date: 23-May-07



Qualifiers:

\*

Value exceeds Maximum Contaminant Level

E Value above quantitation range

J Analyte detected below quantitation limits

- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 1 of 1

1/3

## QA/QC SUMMARY REPORT

Client:San Juan RefProject:GAC- 5/15/0	ining 7					Work	<b>Order:</b> 0705220
Analyte	Result	Units	PQL	%Rec	LowLimit HighLim	it %RPD RPI	DLimit Qual
Method: SW8015							
Sample ID: MB-13003		MBLK			Batch ID: 13	003 Analysis Date:	5/22/2007 6:32:11 PM
Diesel Range Organics (DRO)	ND	mg/L	1.0				
Motor Oil Range Organics (MRO)	ND	mg/L	5.0				
Sample ID: LCS-13003		LCS			Batch ID: 13	003 Analysis Date:	5/22/2007 7:06:50 PM
Diesel Range Organics (DRO)	4.973	mg/L	1.0	99.5	74 157		
Sample ID: LCSD-13003		LCSD			Batch ID: 13	003 Analysis Date:	5/22/2007 7:41:33 PM
Diesel Range Organics (DRO)	5.046	mg/L	1.0	101	74 157	1.47 2	3
Method: SW8015							
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID: R23	622 Analysis Date:	5/16/2007 8:18:09 AM
Gasoline Range Organics (GRO)	ND	mg/L	0.050				
Sample ID: 2.5UG GRO LCS		LCS			Batch ID: R23	622 Analysis Date:	5/16/2007 7:34:35 PM
Gasoline Range Organics (GRO)	0 4916	ma/l	0.050	95.2	80 115	-	
Sample ID: 2.5UG GRO LCSD	0.1010	LCSD	0.000	00.2	Batch ID: R23	622 Analysis Date	5/16/2007 8:04:40 PM
Gasoline Range Organics (GRO)	0.4758	mg/L	0.050	92.1	80 115	3.27 8.	39
Mothod: SNR024					· · · · · · · · · · · · · · · · · · ·		
		MDLK			Potch ID: P22	622 Apolycic Doto:	5/16/2007 8-19-00 AM
Sample ID. SME KEAGENT BLA		WIDEN			Batorino, KZ3	ozz Analysis Date.	5/10/2007 6.16.09 AW
Benzene	ND	µg/L	1.0				
1 Oluene	ND	µg/L	1.0				
	ND	µg/L	1.0				
Somple ID: 100NC RTEX LCS	ND	µg/L	2.0		Datab ID: D22	600 Analysia Data	E /4 0/0007 0-0 4-07 DM
Sample ID. TOUNG BIEX ECS		203			Dalcini). K23	622 Analysis Date:	5/16/2007 6:34:27 PM
Benzene	19.52	µg/L	1.0	97.6	85.9 113		
Taluene	19.54	µg/L	1.0	97.7	86.4 113		
Ethylbenzene	19.86	µg/L	1.0	99.3	83.5 118		
	58.81	µg/L	2.0	- 98.0	83.4 122		
Sample ID: 100NG BIEX LCSD		LCSD			Batch ID: R23	622 Analysis Date:	5/16/2007 7:04:37 PM
Benzene	19.07	µg/L	1.0	95.3	85.9 113	2.35 2	
Taluene	19.40	µg/L	1.0	97.0	86.4 113	0.729 1	9
Ethylbenzene	19.52	µg/L	1.0	97.6	83.5 118	1.71 1	0
Xylenes, Total	58.09	µg/L	2.0	96.8	83.4 122	1.23 1	3

Qualifiers:

- 14

- E Value above quantitation range
- J Analyte detected below quantitation limits
- R RPD outside accepted recovery limits

- H Holding times for preparation or analysis exceeded
  - Not Detected at the Reporting Limit

ND

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Spike recovery outside accepted recovery limits 2 / 3

Page 1

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Iall Environmental Analysis Laboratory, I	nc.				
Sa	ample Receipt Ch	necklist		•	
Client Name SJR		Date and Tim	e Received:	5/16/2007	
Vork Order Number 0705220		Received b	y TLS		
Checklist completed by January Ci	Mac Date	116,07			
Aatrix Carrier	name <u>UPS</u>				
hipping container/cooler in good condition?	Yes 🗸	No	Not Present		
Custody seals intact on shipping container/cooler?	Yes 🗹	No	Not Present	Not Shipped	
Sustody seals intact on sample bottles?	Yes	No	N/A		
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 🗌		<i>.</i>	
Il samples received within holding time?	Yes 🗹	No 🗔			
Vater - VOA vials have zero headspace? No VOA via	als submitted	Yes 🗹	No		
Vater - Preservation labels on bottle and cap match?	Yes	No 🗌	N/A 🔽		
Nater - pH acceptable upon receipt?	Yes 🗌	No	N/A 🔽		
Container/Temp Blank temperature?	<b>2°</b>	4° C ± 2 Accep	otable	•	•
COMMENTS:		If given sufficie	ent time to cool.		
	· · · · · · · · · · · · · · · · · · ·				
Client contacted Date contact	ed:	P	erson contacted		
Contacted by: Regarding					
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Comments:					-
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Corrective Action					-
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	/ir Bubbles or Headspace (Y or N)	·		
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<b>NTAL</b> <b>NTAL</b> <b>NTAL</b> <b>NTAL</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b>				
Licom CDA	(AOV) BODS( (AOV-im92) 07S8			
ME, SU ME,  1087 Pesticides / PCB's (8082)				
Vironr Vironr Vironr	hions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	· · · · · · · · · · · · · · · · · · ·		
LEC Hawk 50.34 D5.34 Dallen	sistem 8 ARO?			
AND AND Albuqu all 50 all 50	(HA9 10 AN9) 01 25			
	DC (Method 8021)		+ +	 
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	(lacaiO\zs0) 82108 bortjaM H9			
	(VID anilossa) H9T + 38TM + X3T8			arks:
	BTEX + <del>70456</del> + <del>70466</del> (8021)			Beu
$\begin{array}{c c} & 0A/QC \ Package: \\ Std \Box & Level 4 \\ \hline \\ Other: \\ Project Name: \\ \\ Project #: \\ \end{array}$	Project Manager: Project Manager: Sampler: Bob Krakow Sample Temperature: Number/Volume HaCL HND	3-104- KC 1		Received By: (Signature) 5/1/0/07 Repeived By: (Signature)
CHAIN-OF-CUGTODY RECORD Client: SAN Juan Refining Address: #57 Rol 4990	Blemmfreld     NM       BPHone #:     SP413       Phone #:     SP5-632-4161       Fax #:     SOS-632-3911       Date     Time     Matrix     Sample1.D. No.	Spirlof Lalse Hew CAC - B		Date: Time: Relinduished/By: (Sighature) S(S(0) 1.0M with 0 w bad 8 Date: Time: Relinquished By: (Signature)

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#### COVER LETTER

Monday, July 02, 2007

Cindy Hurtado San Juan Refining #50 CR 4990 Bloomfield, NM 87413

TEL: (505) 632-4161 FAX (505) 632-3911

RE: GAC 2nd QTR-2007

Dear Cindy Hurtado:

Order No.: 0706319

Hall Environmental Analysis Laboratory, Inc. received 3 sample(s) on 6/21/2007 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager Nancy McDuffie, Laboratory Manager

NM Lab # NM9425 AZ license # AZ0682 ORELAP Lab # NM100001





4901 Hawkins NE Suite D Albuquerque, NM 87109 505.345.3975 E Fax 505.345.4107 www.hallenvironmental.com

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CLJENT:	San Juan Refining			Client Sat	nple ID: G	AC In	fluent
Lab Order:	0706319			Collecti	on Date: 6/	20/20	07 9:05:00 AM
Project:	GAC 2nd QTR-2007		• •	Date R	eceived: 6/	21/20	07
Lab ID:	0706319-01				Matrix: A	QUEC	)US
Analyses	· · · ·	Result	PQL	Qual Units	. D	F	Date Analyzed
EPA METHOD 8	015B: DIESEL RANGE	-					Analyst: SCC
Diesel Range Or	ganics (DRO)	1.4	1.0	mg/L	1	1	6/27/2007 2:55:52 PM
Motor Oil Range	Organics (MRO)	ND	5.0	mg/L	. 1		6/27/2007 2:55:52 PM
Surr: DNOP		112	58-140	%REC	1	·	6/27/2007 2:55:52 PM
EPA METHOD 8	015B: GASOLINE RANG	E					Analyst: NSB
Gasoline Range	Organics (GRO)	4.8	1.0	mg/L	20	כ	7/1/2007 12:17:06 AM
Surr: BFB		106	79.2-121	%REC	20	D	7/1/2007 12:17:06 AM
EPA METHOD 8	021B: VOLATILES						Analyst: NSB
Methyl tert-butyl	ether (MTBE)	ND	50	µg/L	20	0	7/1/2007 12:17:06 AM
Benzene	,	350	20	μg/L	20	0	7/1/2007 12:17:06 AM
Toluene		ND	20	րց/Ր	20	0	7/1/2007 12:17:06 AM
Ethylbenzene		730	20	µg/L	20	0	7/1/2007 12:17:06 AM
Xylenes, Total		700	40	µg/L	20	0	7/1/2007 12:17:06 AM
Surr: 4-Bromo	lluorobenzene	90.8	70.2-105	%REC	2	0	7/1/2007 12:17:06 AM

B Analyte detected in the associated Method Blank

Date: 02-Jul-07

H Holding times for preparation or analysis exceeded

. . .

MCL Maximum Contaminant Level RL Reporting Limit

ND Not Detected at the Reporting Limit

Value above quantitation range

Qualifiers:

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S Spike recovery outside accepted recovery limits

Analyte detected below quantitation limits

Value exceeds Maximum Contaminant Level

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Page 1 of 3

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Hall Envi	02-Ju	02-Jul-()/							
CLIENT:	San Juan Refining			Client	Sample 1D:	GAC	GAC #1		
Lab Order:	Drder: 0706319		Colle	ction Date:	6/20/2007 9:15:00 AM				
Project:	GAC 2nd QTR-2007	Date Received:					2007		
Lab ID: 0706319-02		Matrix				AQUEOUS			
Analyses		Result	PQL	Qual Unit	5	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE						Analyst: SCC		
Diesel Range Organics (DRO)		ND	1.0	mg/L		1	6/27/2007 3:31:08 PM		
Motor Oil Ran	ge Organics (MRO)	ND	5.0	mg/L		1	6/27/2007 3:31:08 PM		
Surr: DNOP	)	<b>11</b> 1	58-140	%RE	С	1	6/27/2007 3:31:08 PM		
EPA METHOD	8015B: GASOLINE RANG	GE					Analyst: NSB		
Gasoline Rang	ge Organics (GRO)	ND	0.050	mg/L		1	7/1/2007 12:47:13 AM		
Surr: BFB		96.7	79.2-121	%RE	С	1	7/1/2007 12:47:13 AM		
EPA METHOD	8021B: VOLATILES						Analyst: NSB		
Methyl tert-bul	lyl elher (MTBE)	ND	2.5	µg/L		1	7/1/2007 12:47:13 AM		
Benzene		ND	1.0	hð\r		1	7/1/2007 12:47:13 AM		
Toluene		ND	1.0	µg/L		1	7/1/2007 12:47:13 AM		
Ethylbenzene		ND	1.0	µg/L		1	7/1/2007 12:47:13 AM		

ND

82.4

2.0

70.2-105

µg/L

%REC



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Xylenes, Total

Surr. 4-Bromofluorobenzene

Value exceeds Maximum Contaminant Level

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- E Value above quantitation range
- Analyte detected below quantitation limits J
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits
- В Analyte detected in the associated Method Blank
- Н Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Page 2 of 3

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7/1/2007 12:47:13 AM

7/1/2007 12:47:13 AM

			· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·		
CLIENT: San Juan Refining Client Sample ID						GAC #2		
Lab Order:	0706319			<b>Collection Date:</b>	6/20/2007 9:25:00 AM			
Project: GAC 2nd QTR-20		•		Date Received:	6/21/2	6/21/2007		
Lab ID:	0706319-03			Matrix:	AQUEOUS			
Analyses	· ·	Result	PQL Qua	al Units	DF	Date Analyzed		
EPA METHOD	8015B: DIESEL RANGE	······································				Analyst: SCC		
Diesel Range (	Organics (DRO)	ND	1.0	mg/L	1	6/27/2007 4:06:25 PM		
Motor Oil Range Organics (MRO)		ND	5.0	mg/L	1	6/27/2007 4:06:25 PM		
Surr: DNOP		112	58-140	%REC	1	6/27/2007 4:06:25 PM		
EPA METHOD	8015B: GASOLINE RANG	SE				Analyst: NSB		
Gasoline Rang	e Organics (GRO)	ND	0.050	mg/L	1	7/1/2007 1:17:12 AM		
Surr: BFB		96.5	79.2-121	%REC	1	7/1/2007 1:17:12 AM		
EPA METHOD	8021B: VOLATILES					Analyst: NSB		
Methyl tert-but	yl elher (MTBE)	ND	2.5	µg/L	1	7/1/2007 1:17:12 AM		
Benzene		2.5	1.0	µg/L	1	7/1/2007 1:17:12 AM		
Toluene		ND	1.0	µg/L	1	7/1/2007 1:17:12 AM		
Ethylbenzene	,	1.5	1.0	µg/L	1	7/1/2007 1:17:12 AM		
Xylenes, Total		2.2	2.0	ից/Ն	1	7/1/2007 1:17:12 AM		
Surr: 4-Bron	nofluorobenzene	82.0	70.2-105	%REC	1	7/1/2007 1:17:12 AM		

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

Date: 02-Jul-07

- MCL Maximum Contaminant Level RL Reporting Limit
- 3/5

Value exceeds Maximum Contaminant Level

Analyte detected below quantitation limits

Spike recovery outside accepted recovery limits

Value above quantitation range

Not Detected at the Reporting Limit

Qualifiers:

E

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ND

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Page 3 of 3



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## QA/QC SUMMARY REPORT

Client:
Project:

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San Juan Refining GAC 2nd QTR-2007

Work Order: 0706319

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD R	PDLimit Qual	
Method: SW8015							· · · · · · · · ·		
Sample ID: MB-13262		MBLK			Batch II	); 13262	Analysis Date:	: 6/27/2007 1:10:07 PM	
Diesel Range Organics (DRO)	ND	mg/L	1.0				-		
Motor Oil Range Organics (MRO)	ND	mg/L	5.0						
Sample ID: LCS-13262		LCS			Batch II	): <b>13262</b>	Analysis Date:	6/27/2007 1:45:10 PM	
Diesel Range Organics (DRO)	5.722	mg/L	1.0	114	74	157			
Sample ID: LCSD-13262		LCSD			Batch IE	): 13262	Analysis Date:	6/27/2007 2:20:34 PM	
Diesel Range Organics (DRO)	5.745	mg/L	1.0	115	74	157	0.392	23	
Method: SINRO15						• •			
Sample ID <sup>2</sup> 0706319-034 MSD		MSD			Batch II	. 074109	Analysia Data	7/1/2007 217717 000	
	0 0000	~~"	0.050	055	00	. KZ4190	Analysis Dale.	771720072017177780	
Sample ID: 5ML REACENT BLA	0.5070		0.050	95.5	BU Detete (E	115	2.07	8.39	
Sample ID: SWL REAGENT BLA		MBLK			Batch IL	): R24198	Analysis Dale:	6/30/2007 6:59:05 PM	
Gasoline Range Organics (GRO)	ND	mg/L	0.050						
Sample ID: 2.50G GRO LCS		LCS			Batch IE	); R24198	Analysis Date:	6/30/2007 11:14:32 PM	
Gasoline Range Organics (GRO)	0.5044	mg/L	0.050	101	80	115			
Sample ID: 0706319-03A MS		MS			Batch II	): R24198	Analysis Date:	7/1/2007 1:47:18 AM	
Gasoline Range Organics (GRO)	D.4966	mg/L	0.050	93.4	80	115			
Method: SW8021									
Sample ID: 0706319-03A MSD		MSD			Batch IE	): R24198	Analysis Date:	7/1/2007 2:17:17 AM	
Methyl tert-bulyl ether (MTBE)	6.924	µg/L	2.5	83.9	51.2	138	2.19	28	
Benzene	7.290	µg/L	1.0	87.1	85.9	113	0.633	27	
Toluene	39.31	µg/L	1.0	97.4	86.4	113	2.74	19	
Ethylbenzene	8.948	µg/L	1.0	93.6	83.5	118	3.16	10	
Xylenes, Total	47.49	µg/L	2.0	98.3	83.4	122	1.81	13	
Sample ID: 5ML REAGENT BLA		MBLK			Batch ID	); <b>R2419</b> 8	Analysis Date:	6/30/2007 6:59:05 PM	
Methyl tert-butyl ether (MTBE)	ND	µg/L	2.5						
Benzene	ND	μg/L	1.0						
Toluene	ND	hð\r	1.0					•	
Ethylberizene	ND	µg/L	1.0						
Xylenes, Tolal	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		LCS			Batch IE	): R24198	Analysis Date:	6/30/2007 11:44:25 PN	
Methyl tert-bulyl ether (MTBE)	18.69	hð\r	2.5	93.5	51.2	138			
Benzene	19.42	hð\r	1.0	97.1	85.9	113			
Toluene	19.80	hð\r	1.0	99.0	86.4	113			
Ethylbenzene	20.03	µg/L	- 1.0	100	83.5	118			
Xylenes, Total	59.67	µg/L	2.0	99.4	83.4	122			
Sample ID: 0706319-03A MS		MS			Batch IC	): <b>R2</b> 4198	Analysis Date:	7/1/2007 1:47:18 AM	
Methyl tert-butyl ether (MTBE)	6.774	µg/L	2.5	B2.1	51.2	138			
Benzene	7.244	hð\r	1.0	86.3	85.9	113			
Toluene	38.25	hðir	1.0	94.8	86.4	113			
Ethylbenzene	8.670	hð\r	1.0	90.1	83.5	118			
Xylenes, Total	46.63	hð\r	2.0	96.4	83.4	122			
Qualificatio	· · · • • · ·		-						
E Value above romatization more			1.1	Holding	ines for mon	tion or analysi	e expendial		
Analyte detected below opentit:	ntion limits		ND	Not Deter	cted at the Resso	nino Linio nino Linio	a checcudu		
R RPD outside accented recovery limits				Spike rec	overv outside a	v fimits	Page I		
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Hall Environmental Analysis Laboratory,	Inc.	5. · · ·			
	Sample Receipt Ch	ecklist			
Client Name SJR	• • •	Date and Tin	ne Received:	6/21/2007	<b>U</b>
Work Order Number 0706319		Received t	y TLS		
Checklist completed by	6/21/0	7			
Signature		··· · ···	·		
Malrix Carrie	er name <u>UPS</u>				
Shipping container/cooler in good condition?	Yes 🔽		Not Present		
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗌	Nol Present	Not Shipped	
Custody seals intact on sample bottles?	Yes 🗌	No 🗌	N/A	$\checkmark$	
Chain of custody present?	Yes 🗹	No 🗌			
Chain of custody signed when relinquished and received?	Yes 🗹				
Chain of custody agrees with sample labels?	Yes 🗹	Νο			
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 🗌			
Water - VOA vials have zero headspace? No VOA	vials submitted	Yes 🗹	No 🗌		
Water - Preservation labels on bottle and cap match?	Yes	No 🗔	N/A 🗹		
Water - pH acceptable upon receipt?	Yes 📙	No 🛄	N/A 🗹		
Container/Temp Blank temperature?	6°	4° C ± 2 Accel	otable		
COMMENTS:		n given semen			
			• • • • • • • • • • • • • • • • • • •		
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Client contacted Date conta			erson conlacted		
Contacted by: Regarding	<u>.</u>		n maratanan ayay karangan sa s		
Comments:					
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Corrective Action	<b></b>	····· ,	··· · ·····	· · · · · · · · · · · · · · · · · · ·	
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	HALL ENVIRONMENTAL ANALYSIS LABORATORY 4901 Hawkins NE, Suite D	Albuquerque, New Inexico of 109 Tel: 505, 345, 3975 Fax 505, 345, 4107 www.hallenvironmental.com	ANANYSIS REQUEST	· · · · · · · · · · · · · · · · · · ·	се (, or N)	edspee 7) 1, bC8 3, NO <sup>s</sup> H) (H2 S3)	28 bor 24 or P, 20, 100, 100 100, 100 100 100 100 100 100 100 100 100 100	taeM) 203 AM9 0 (FW) M8 AA7A M8 AA7A M8 AF7A Fest 78 78 78 78 78 78 78 78 78 78 78 78 78									
				<b>μλ</b> )	(1508) & nD anilose3) (lasai0\26	1991) 1993 1993 1994 1994 1994 1994 1994 1994	+ 381 • 381 • 08 bc • 4 bor • 5 bor	EDB (W <sup>E</sup> t) 1bH (W <sup>E</sup> t) BLEX + W BLEX + W	XX	X	X X	、 、 、					Remarks:
	0A/ OC Package: Std 🔲 Level 4 🗍	Jame: 1 - 2nd - 2 hrs	+: CUK NUT		Managar: 117264. Hyrtado	dunado las Kaler	فرال ( فران فران فران فران فران فران فران فران	Preservative         HEAL No.           HgCl <sub>2</sub> HNO <sub>3</sub> #///         Ch4 Ch2 Ch2 Ch2 Ch2 Ch2 Ch2 Ch2 Ch2 Ch2 Ch2	lat 1 1	104- 1 2 3	04 2						Recgived By: (Signature) しんこう Con くの Recgived By: (Signature)
		Project	Project	87413	Project	Sample	Sample	e 1.D. No.	Influent 4-1	/ . / 4-1	t 2 44	•		<del></del> .			O O E I I I I I I I I I I I I I I I I I
		en Reting	1 4000	Call, NM		32-416 (	2 - 3911	Matrix Sampl	420 640	1 Gr #	1 640 1						Adinguished By: Isignatu Adinquished By: (Signatu Relinquished By: (Signatu
•	-Ho-NIVHO	Client: SNJ	Address: #57) R	Bonn	þ	Phone #: 505-6	Fax #: 505-63	Date	6/20/07 1054	1 915/	935,9-						Date: 11me: 15 Date: 0100 Time: 15 Date: 12

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