

GW - 32

REPORTS

YEAR(S):

2004 GW REPORT

GIANT

Giant Refining Company
Route 3, Box 7
Gallup, NM 87301

August 29, 2005

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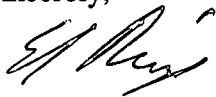
RE: 2004 OCD Annual Groundwater Report, Discharge Permit GW-032

Dear Wayne and Hope:

Giant Refining is pleased to submit the 2004 Annual Groundwater Report for our Ciniza Refinery. This report is being submitted to comply with Discharge Permit-032 annual groundwater reporting requirements.

If you have any questions please contact James Romero of my staff at (505) 722-0227 or feel free to contact me at (505) 722-0217.

Sincerely,



Ed Riege, Environmental Superintendent
Giant Refining, Ciniza Refinery
Gallup, NM

cc: Ed Rios w/o report

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Section 1.0 Facility Description

The Ciniza Refinery is a crude oil refining facility. The Ciniza Refinery is located within a rural and sparsely populated section of McKinley County. The setting is a high desert plain on the western slope of the continental divide. The nearest population centers are the Pilot (formerly Giant) Travel Center refueling plaza, the Interstate 40 highway corridor, and a small cluster of residential homes located on the south side of Interstate 40 approximately 2 miles southwest of the refinery. The surrounding land is comprised primarily of public lands and is used for cattle and sheep grazing at a density of less than six cattle or 30 sheep per section. McKinley County is predominantly rural, as are the adjoining portions of neighboring counties.

The refinery primarily receives crude oil via two 6 inch diameter pipelines; Bisti Pipeline comes down from the Four Corners Area and enters the refinery property from the north and Hoshpah Pipeline comes in from the northeast and is an interconnection with a main interstate pipeline. In addition, the refinery also receives natural gasoline feedstocks via a 4 inch diameter pipeline that comes in from the west along the Interstate 40 corridor. These feedstocks are then stored in tanks until refined into products. The refinery has an overall capacity to process up to 32,000 barrels per day of crude oil and natural gasoline feedstocks.

The refinery incorporates various processing units that convert crude oil and natural gasoline into finished products. These units are briefly described as follows.

- The distillation unit separates crude oil into various fractions; including gas, naphtha, light oil, heavy oil, and residuum.
- The fluidized catalytic cracking unit breaks up long-chain hydrocarbon molecules into smaller molecules, and essentially converts heavier oils into naphtha and lighter oils.
- The alkylation unit combines specific types of hydrocarbon molecules into a high octane gasoline blending component.
- The reforming unit combines low octane naphtha molecules to form high octane naphtha.
- The hydrotreating unit removes undesirable sulfur and nitrogen compounds from intermediate feedstocks, and also saturates these feedstocks with hydrogen.
- The isomerization unit converts low octane hydrocarbon molecules into high octane molecules.
- The treater units remove impurities from various intermediate and blending feedstocks in order to produce finished products that comply with sales specifications.
- The sulfur recovery unit converts and recovers various sulfur compounds from other processing units and then produces a solid elemental sulfur byproduct.

As a result of these processing steps, the refinery produces a wide range of petroleum products including propane, butane, unleaded gasoline, jet fuel, diesel, kerosene, and residual fuel. In addition to the aforementioned processing units, various other equipment and systems support the operation of the refinery and are briefly described as follows.

Storage tanks are used throughout the refinery to hold and store crude oil, natural gasoline, intermediate feedstocks, finished products, chemicals, and water. These tanks are all located aboveground and range in size from 80,000 barrels to less than a 1,000 barrels. A grouping of tanks is commonly referred to as a "tank farm."

Pumps, valves, and piping systems are used throughout the refinery to transfer various liquids among tankage and processing units.

A railroad spur track and a railcar loading rack are used to transfer feedstocks and products from refinery tankage both into and out of railcars.

Several tank truck loading racks are used at the refinery to load out finished products and also may receive crude oil, other feedstocks, additives, and chemicals.

A pipeline connects the refinery to the Pilot (formerly Giant) Travel Center and is used to supply gasoline and diesel fuel to the refueling plaza.

A firefighting training facility is used to conduct employee firefighting training.

The process wastewater system is a network of curbing, paving, catch basins, and underground piping that collects rainwater and other effluent from various processing areas within the refinery and then conveys this wastewater to the API separator.

The API separator is a large concrete containment structure that utilizes gravity and residence time to separate wastewater into three components; a sludge layer that sinks to the bottom, a scum layer that floats to the top, and a clarified effluent remaining in the middle. The clarified effluent then flows onward to the stripper columns.

At the stripper columns, ambient air is blown upwards through a falling cascade of clarified wastewater and, as a result, dissolved gases and light hydrocarbons are disengaged and vented. Effluent from the stripper columns flows onward to the aeration basins.

At the aeration basins, the clarified and stripped wastewater is further mixed with ambient air in order to oxidize any remaining constituents and increase the dissolved oxygen concentration in the water in order to enhance microbial activity. Effluent from the aeration basins flows onward to the evaporation ponds.

At the evaporation ponds, wastewater is converted into vapor via solar and mechanical wind-effect evaporation. Liquid wastewater is not discharged from the refinery.

The storm water system is a network of valves, gates, berms, embankments, culverts, trenches, ditches, natural arroyos, and retention ponds that collect, convey, control, treat, and release storm water that falls within or passes through refinery property.

Section 2.0 Name of Operator or Legally Responsible Party or Local Representative

Owner: Giant Industries Arizona, Inc. (parent corporation)
23733 North Scottsdale Road
Scottsdale, Arizona 85255

Operator: Giant Refining Company (postal address)
Route 3, Box 7
Gallup, New Mexico 87301

Giant Refining Company (physical address)
I-40, Exit 39
Jamestown, New Mexico 87347

Key Contact: Ed Rios, General Manager

Telephone: (505) 722-3833

Section 3.0 Location of the Discharge Plan Facility

The Ciniza Refinery is generally located within the west-central region of the State of New Mexico, approximately 17 miles east-southeast of the City of Gallup in McKinley County. It is more specifically located immediately north of Interstate 40 at Exit 39, and approximately one mile northeast of the Pilot (formerly Giant) Travel Plaza.

Regional Map

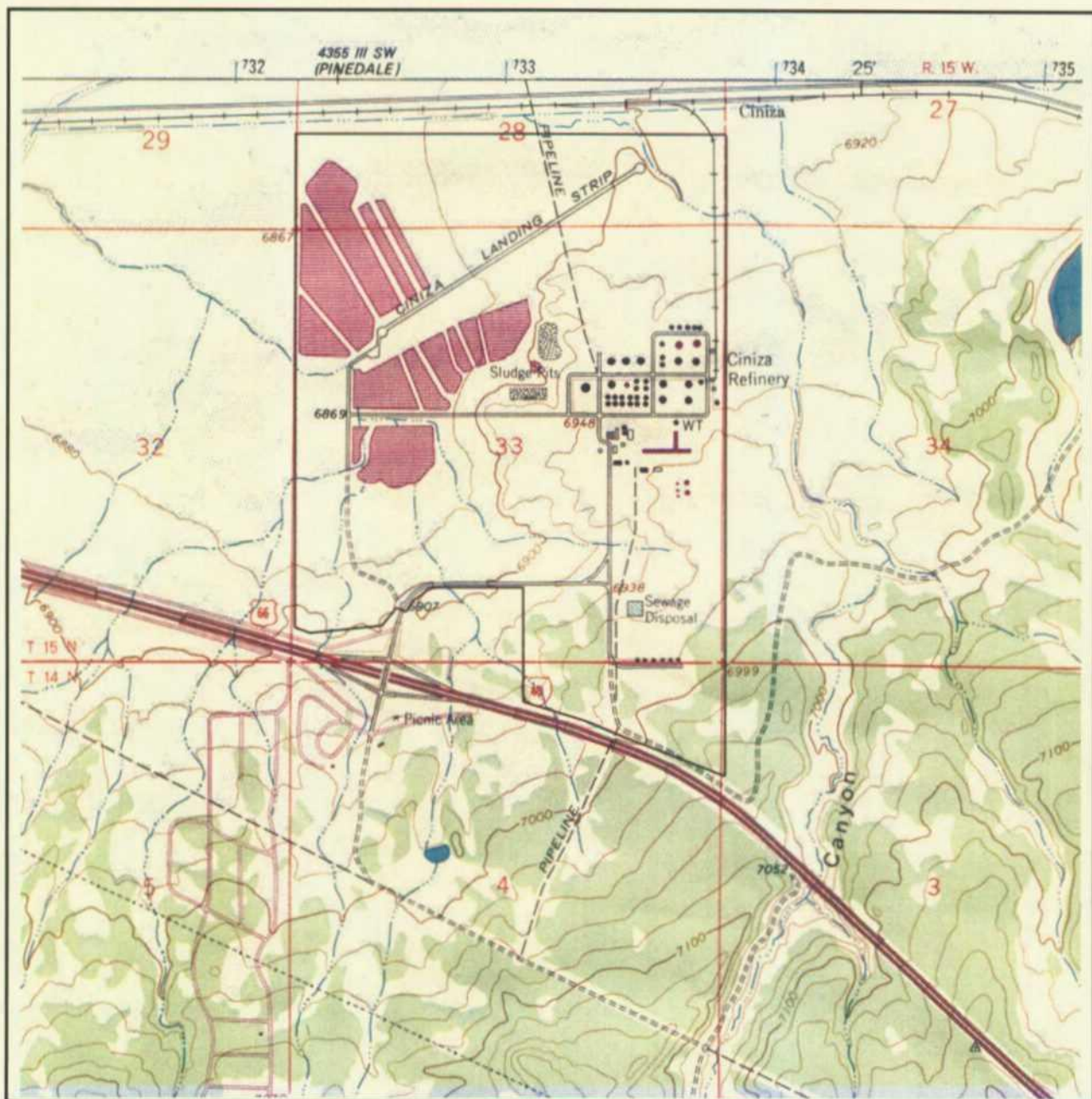


The plant site is nominally located at latitude 35° 29' 30" and longitude 108° 24' 40".

Section 4.0 A detailed map of the plant site

The refinery is situated on an 810 acre irregular shaped tract of land that is substantially located within the lower one quarter of Section 28 and throughout Section 33 of Township 15 North, Range 15 West of the New Mexico Prime Meridian. A small component of the property lies within the northeastern one quarter of Section 4 of Township 14 North, Range 15 West.

Locality Map
USGS Topographical Map - Ciniza Quadrangle (Revised 1980)



Section 5.0 Site Characteristics

The Ciniza Refinery is located within a rural and sparsely populated section of McKinley County. The setting is a high desert plain on the western flank of the continental divide. The surrounding land is comprised primarily of public lands and is used for cattle and sheep grazing at a density of less than six cattle or 30 sheep per section. Surface vegetation predominantly consists of native grasses, shrubs, cacti, and small trees. Average rainfall is less than 7 inches per year.

Local topography consists of a gradually inclined down-slope from high ground in the southeast to a lowland fluvial plain in the northwest. The highest point on refinery property is located at the southeast corner boundary (elevation approximately 7,040 feet) and the lowest point is located at the northwest corner boundary (elevation approximately 6,860 feet). The refinery processing facility is located on a flat man-made terrace at an elevation of approximately 6,950 feet.

Surface water in this region predominantly consists of the man-made evaporation ponds and aeration basins located within the refinery, a cattle watering pond (Jon Myer's Pond) located east of the refinery, two small unnamed spring fed ponds located south of the refinery, and the South Fork of the Puerco River and its tributary arroyos. The various ponds and basins typically contain water consistently throughout the year. The South Fork of the Puerco River and its tributaries are intermittent and generally contain water only during and immediately after the occurrence of precipitation.

The 810 acre refinery property site is located on a layered geologic formation. Surface soils generally consist of fluvial and alluvial deposits; primarily clay and silt with minor inter-bedded sand layers. Below this surface layer is the Chinle Formation, which consists of very low permeability claystones and siltstones that comprise the shales of this formation. As such, the Chinle Formation effectively serves as an aquiclude. Inter-bedded within the Chinle Formation is the Sonsela Sandstone bed, which represents the uppermost potential aquifer in the region.

The Sonsela Sandstone bed lies within and parallels the dip of the Chinle Formation. As such, its high point is located southeast of the refinery and it slopes downward to the northwest as it passes under the refinery. Due to the confinement of the Chinle Formation aquiclude, the Sonsela Sandstone bed acts as a water-bearing reservoir and is artesian at its lower extremis. Artesian conditions exist throughout the central and western portions of the refinery property.

Groundwater flow within the Chinle Formation is extremely slow and typically averages less than 10^{-10} centimeters per second (less than 0.01 feet per year). Groundwater flow within the surface soil layer above the Chinle Formation is highly variable due to the presence of complex and irregular stratigraphy; including sand stringers, cobble beds, and dense clay layers. As such, hydraulic conductivity may range from less than 10^{-2} centimeters per second in the gravelly sands immediately overlying the Chinle Formation up to 10^{-8} centimeters per second in the clay soil layers located near the surface.

Shallow groundwater located under refinery property generally flows along the upper contact of the Chinle Formation. The prevailing flow direction is from the southeast and toward the northwest; however, a subsurface ridge has been identified and is thought to deflect some flow in a northeasterly direction in the vicinity of the refinery tank farm.

Section 6.0 Groundwater Monitoring Plan

On July 23, 2003, a meeting was held at the Ciniza Refinery that included representatives of the refinery, OCD, and NMED. At this meeting, a detailed discussion of the groundwater monitoring plan took place and a consensus agreement was reached in regard to proposed modification of the existing plan. As such, the following changes were made in this application.

1. In the third quarter of 2004, the following existing wells that were technically inadequate or potentially hazardous to groundwater quality were plugged and abandoned: OW-2, 3, 7, 9, and 24, and also SMW-1, 3, and 5. The general procedure for closure was to use a 6% bentonite (montmorillonite clay), and cement slurry as the closing agent. Slurry was injected at the bottom of the wells to displace the water. A minimum of three (3) well volumes of slurry was pressure injected into the well. Slurry weight was approximately thirteen (13) pound per gallon. Once injection was completed the surface finish was demolished and removed from the well location. This concrete will be used for pond rip-rap. The steel protective casing was cut and removed from the concrete and taken to the scrap metal recycling storage area. The well site was re-graded to natural conditions. A closure report indicating slurry volumes and any work performed at the well locations will be placed in the well file. Precision Engineering, Inc. will change databases and electronic files to reflect the well closures and the dates of the closure. Copies of the updated maps have been provided to OCD and NMED.

OW-16, 17, 25, and 26 were previously plugged and closed and have now been replaced by RW-5 and 6. In addition, OW-20 has been closed and will not be replaced.

2. New groundwater monitoring well installation.

New groundwater monitoring wells were installed in October and November 2003, and June and July 2004. There are three new sites for these wells located near the northwest corner boundary of the refinery. One site is located generally west of Evaporation Pond Number 8. One is located generally northwest of Evaporation Pond Number 11. One site is located generally north of Evaporation Pond Number 12.

At each of the three sites, a dedicated well was drilled, installed, sealed, and screened solely within the Sonsela Sandstone Bed artesian reservoir (BW-1-C, BW-2-C, and BW-3-C). These wells shall be used for the purpose of detecting a potential impact to the Sonsela Aquifer.

At each of the three sites, a dedicated well was drilled, installed, sealed, and screened solely within the alluvial layer that exists immediately above and upon the surface of the Chinle Formation (BW-1-B, BW-2-B, and BW-3-B, **Well B-1-B was dry**). This potential groundwater source is known to be intermittent and variable; these wells shall be used to detect potential contamination within the shallow groundwater layer that exists intermittently above the Chinle Formation aquiclude.

(e.g. sand lens) located above the Chinle Formation (BW-1-A, BW-2-A, and BW-3-A; **BW-1-A and BW-3-A were dry**). These wells were installed because it appears likely that a distinct water-bearing layer had been identified and that it could be reliably sampled.

3. A new well (GWM-1) was installed downgradient of the aeration basins in order to monitor for the presence of shallow groundwater and was used to detect potential leakage from the aeration basins. The location of this well was determined in the field after mutual consultation by representatives of the refinery, OCD, and the drilling contractor.
4. The new groundwater monitoring wells described in Item 2 above, plus OW-11, 12, 13, 14, 29, and 30, and MW-1, 4, and 5, and SMW-2 and 4 shall be routinely measured, sampled, and analyzed so as to provide the information necessary to detect an adverse groundwater impact and allow for a timely and effective response.

The observation, measurement, sampling frequency, and type of analysis shall be as follows.

Well ID	Frequency	Measurement ⁴ / Analysis
OW-1	Quarterly	Visual check for artesian flow conditions
OW-10	Quarterly	Level measurement of the Sonsela Aquifer water table
GWM-1	Quarterly	Check for indication of aeration basin leakage
		General chemistry / VOC / SVOC / BTEX / MTBE / metals
OW-11	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / metals
OW-12	Annual	BTEX / MTBE
OW-13 ²	Annual	BTEX / MTBE
OW-14	Annual	BTEX / MTBE
OW-29	Annual	BTEX / MTBE
OW-30	Annual	BTEX / MTBE
BW-1-A ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / metals
BW-1-B ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / metals
BW-1-C ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / metals
BW-2-A ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / metals
BW-2-B ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / metals
BW-2-C ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / metals
BW-3-A ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / metals
BW-3-B ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / metals
BW-3-C ³	Annual	General chemistry / VOC / SVOC / BTEX / MTBE / metals
MW-1	Annual	General chemistry / RCRA list constituents ⁵

MW-4	Annual	General chemistry / RCRA list constituents ⁵
MW-5	Annual	General chemistry / RCRA list constituents ⁵
SMW-2	Annual	General chemistry / RCRA list constituents ⁵
SMW-4	Annual	General chemistry / RCRA list constituents ⁵
RW-1	Annual	Measurement of product layer thickness, if present
RW-2	Annual	Measurement of product layer thickness, if present
RW-5	Annual	Measurement of product layer thickness, if present
RW-6	Annual	Measurement of product layer thickness, if present
#2 (Process)	2004 then every 3 yr starting with 2008	SOCs, VOCs, Heavy Metals, Cyanide, Nitrates
#3 (Drinking/ Process)	Every 3 years starting with 2006	SOCs, VOCs, Heavy Metals, Cyanide, Nitrates
#4 (Process)	Every 3 years starting with 2004	SOCs, VOCs, Heavy Metals, Cyanide, Nitrates

¹ This is the new well installed downgradient of the aeration basins.

² When OW-14 is cleaned up, then monitoring of OW-13 shall be discontinued.

³ These are the new wells installed at the northwest corner boundary of the refinery. BW-1-A, BW-1-B, and BW-3-A were dry at the time of drilling.

⁴ To the extent practicable, water table depth shall be measured at each well annually.

⁵ Frequency of sampling shall be per RCRA post closure schedule.

5. In addition to groundwater monitoring, surface water monitoring shall also be conducted as follows.

On an annual basis, a grab sample of the inlet water to Pond #2 shall be collected and analyzed for BOD, COD, TDS, BTEX, and MTBE.

On an annual basis, a grab sample of evaporation pond water shall be collected and analyzed for general chemistry parameters. The evaporation pond selected for sampling shall be the pond, considered by refinery personnel, to most likely contain the highest salinity or TDS. In addition, the selected pond shall be alternated from year-to-year in order to provide a broader indication of analysis.

6. Waste water from Pilot Travel Center and Truck Stop Facility.

Grab samples shall be collected quarterly from the sampling and metering station (triangular notch weir) on the Pilot incoming line. The samples will be analyzed for hazardous characteristics (TCLP) by EPA Method 1311 and B.O.D.

7. Well #4 used for industrial purposes was sampled August 12, 2004 and will be sampled every three years (next in 2007) according to the table in item 4. Industrial Well #2 will be sampled in 2004 and will be sampled every three years beginning in 2008. Well #2, a potable well, is scheduled for sampling in 2006 to meet SDWS, and every three years thereafter.
8. Giant proposes to conduct a perimeter search of the refinery property on a bimonthly basis starting in December 2004. The inspection will focus on hydrocarbon staining or any release that could result in contamination leaving the property boundary. Giant has prepared an inspection checklist to be completed and signed by the environmental employee conducting the inspection. Completed inspection sheets will be maintained onsite.

SECTION 7.0 Permit Condition 16Ai (Monitoring and Remediation activities)

Monitoring

In the third quarter of 2004, the following existing wells that were technically inadequate or potentially hazardous to groundwater quality were plugged and abandoned: OW-2, 3, 7, 9, and 24, and also SMW-1, 3, and 5. The general procedure for closure was to use a 6% bentonite (montmorillonite clay), and cement slurry as the closing agent. Slurry was injected at the bottom of the wells to displace the water. A minimum of three (3) well volumes of slurry was pressure injected into the well. Slurry weight was approximately thirteen (13) pound per gallon. Once injection was completed the surface finish was demolished and removed from the well location. This concrete will be used for pond rip-rap. The steel protective casing was cut and removed from the concrete and taken to the scrap metal recycling storage area. The well site was re-graded to natural conditions. A closure report indicating slurry volumes and any work performed at the well locations will be placed in the well file. Precision Engineering, Inc. will change databases and electronic files to reflect the well closures and the dates of the closure. Copies of the updated maps have been provided to OCD and NMED.

OW-16, 17, 25, and 26 were previously plugged and closed and have now been replaced by RW-5 and 6. In addition, OW-20 has been closed and will not be replaced.

In 2004 new groundwater monitoring wells were installed BW-1A, BW-1-B, BW-2A, BW-2B, BW-3B, BW-1C, BW-2C, and BW-3C. Moreover, a new GWM-1 was installed down gradient of the aeration basins in order to monitor and detect potential leakage from the aeration basins.

In 2004, the following wells were routinely measured, sampled, and analyzed: OW-11, 12, 13, 14, 29, 30, GWM-1, BW-1A, BW-1-B, BW-2A, BW-2B, BW-3B, BW-1C, BW-2C, and BW-3C to provide the information necessary to detect an adverse groundwater impact and allow for a timely and effective response. MW-1, MW-4, MW-5, SMW-2, SMW-4 were not sampled in 2004. Frequency of sampling for these wells shall be per RCRA post closure plan.

For test results, conclusions and recommendations please refer to section 8 Groundwater Testing

Remediation

RR Rack Lagoon

Clean up and closure work began on the railroad rack lagoon on November 11, 12, 15, and 16. Fuh's Trucking removed contaminated soil from the lagoon and placed it on the OCD Non Haz LTA. Giant worked with NMED on a sampling and analysis plan approved by both parties. Samples were taken and indicated that further cleanup is needed at E-1-Wall S and W-1-Wall N.

Winter weather set in and the following will be completed in 2005. Giant will excavate soil to dimensions of 25 ft long x 8 ft wide x 12 to 14 ft deep. After soil removal four samples will be collected from these two areas with two samples collected from the bottom of the excavation floor and two samples from the side walls.

Giant will also remove the old inlet concrete pipe and underlying soils based upon field screening visual observation. Samples will be collected from the bottom of the excavation from undisturbed soil every 50 feet.

Giant will also remove the old inlet concrete pipe and underlying soils based upon field screening and visual observation. Samples will be collected from the bottom of the excavation from undisturbed soil every 50 feet.

Once the cleanup is deemed complete by NMED and OCD then guidelines will be followed for a Voluntary Action Measure Report.

Old API Oil Water Separator

The old API Separator was removed from service on October 6, 2004 and the start up of the new API Separator was on this same date. The old separator was placed into storm water service only in mid December. All residual material was removed with vacuum trucks. The API Separator sludge (463,160 lbs) was sent offsite for recycling at the Norco refinery in October 2004. All sections of the separator were steam cleaned and sand blasted in preparation for inspection and repair. Further cleaning of the all separator bays and stained soils on the outside of the bays resulted in 4500 pounds of K051 waste, which was a combination of sludge, soil and sand. This material was sent offsite for hazardous waste disposal by RINCHEM. The following equipment was operated during closure activities: vacuum trucks, air monitor, air compressor, back hoe, jack hammer, sand blaster, welders, and hand tools. The old 8 inch outlet line was replaced with a 24 inch pipe which routes effluent to Aeration lagoon #1. The pipe skimmer seal between the bays was replaced. The inlet piping was replaced and hooked up to the storm water drainage system. The concrete was patched in numerous places in both bays. The weir wall downstream of the pipe skimmer was rebuilt on both bays. (pictures of the clean up work are attached)







SUMMARY OF GROUNDWATER TESTING

BACKGROUND: Ground water sampling occurred between July and December 2004.

OW-11

OW-11 was visually inspected on a quarterly basis and grab samples taken on December 8, 2004. Sample was analyzed for RCRA Metals, VOC, SVOC, BTEX, MTBE and general chemistry. Lab results showed numbers below the New Mexico Water Quality Standards (NMWQS) for Benzene, Toluene, Ethylbenzene, Xylene, MTBE, and RCRA Metals. However, general chemistry results showed exceedence for Fluoride, Sulfate, and TDS.

RECOMMENDATION: *Giant Ciniza will continue to visually inspect quarterly and test annually for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry*

OW-12

OW-12 was sampled on December 8, 2004 and analyzed for BTEX and MTBE. Lab analysis showed numbers below the NMWQS (Non-Detect) for Benzene, Toluene, Ethylbenzene, Xylene, and MTBE.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on an annual basis for BTEX and MTBE*

OW-13

OW-13 was sampled on December 8, 2004 and analyzed for BTEX and MTBE. Lab analysis showed numbers below the NMWQS (Non-Detect) for Benzene, Toluene, Ethylbenzene, Xylene, and MTBE.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on an annual basis for BTEX and MTBE*

OW-14

OW-14 was sampled on December 9, 2004 and analyzed for BTEX and MTBE. Lab analysis showed numbers below the NMWQS for Toluene, Ethylbenzene, Xylene, and MTBE. However, lab results showed an exceedence of NMWQS and MCL's for Benzene.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on a semi-annual basis for BTEX and MTBE. This well has been known to contain contaminant. Wells 12, 13, 29, and 30 were installed to monitor if contaminants from OW-14 were migrating. Data from the additional wells have not shown any signs of contaminants*

OW-29

OW-29 was sampled on December 8, 2004 and analyzed for BTEX and MTBE. Lab analysis showed numbers below the NMWQS (Non-Detect) for Benzene, Toluene, Ethylbenzene, Xylene, and MTBE.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on an annual basis for BTEX and MTBE*

OW-30

OW-30 was sampled on December 8, 2004 and analyzed for BTEX and MTBE. Lab analysis showed numbers below the NMWQS (Non-Detect) for Benzene, Toluene, Ethylbenzene, Xylene, and MTBE.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on an annual basis for BTEX and MTBE*

BW-1A

BW-1A is a dry well and therefore not sampled

RECOMMENDATION: *Giant Ciniza will continue to visually inspect this well for any liquids. If liquids are observed, documentation will occur and sampled. All samples will be analyzed for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry*

BW-1B

BW-1A is a dry well and therefore not sampled

RECOMMENDATION: *Giant Ciniza will continue to visually inspect this well for any liquids. If liquids appear, samples will be analyzed for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry.*

BW-2A

BW-2A was sampled on August 4, 2004 and analyzed for VOC, SVOC, BTEX, MTBE, RCRA Metals, and General Chemistry. Lab results showed numbers below NMWQS for all parameters except for TDS which slightly exceeded for TDS.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry*

BW-2B

BW-2B was sampled on August 4, 2004 and analyzed for VOC, SVOC, BTEX, MTBE, RCRA Metals and General Chemistry. Lab results showed numbers below the NMWQS for most parameters. However, this well did exceed NMWQS for Fluoride, Selenium and TDS.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry. All future lab reports will be compared to past data to determine if levels of Selenium are increasing or remaining static*

BW-3B

BW-3B was sampled on August 4, 2004 and analyzed for VOC, SVOC, BTEX, MTBE, RCRA Metals, and General Chemistry. Lab results showed numbers below the NMWQS for all parameters with the exception of TDS.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry*

BW-1C

BW-1-C was sampled on August 4, 2004 and analyzed for VOC, SVOC, BTEX, MTBE, RCRA Metals, and General Chemistry. Lab results showed numbers below the NMWQS for all parameters with the exception of Fluoride.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry*

BW-2C

BW-2C was sampled on August 4, 2004 and analyzed for VOC, SVOC, BTEX, MTBE, RCRA Metals, and General Chemistry. Lab results showed numbers below the NMWQS for all parameters with the exception of Fluoride.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry. The fluoride levels are attributed to naturally occurring*

BW-3C

BW-3C was sampled on August 4, 2004 and analyzed for VOC, SVOC, BTEX, MTBE, RCRA Metals, and General Chemistry. Lab results showed numbers below the NMWQS for all parameters. The results did show an exceedence of the MCL's for benzene and the well was re-sampled on October 28, 2004 and was Non-Detect for benzene.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry*

GWM-1

GWM-1 was sampled on July 28, 2004 and December 9, 2004 and analyzed for VOC, SVOC, BTEX, MTBE, RCRA Metals, and General Chemistry. Lab results showed numbers below NMWQS for all parameters.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well on an annual basis for VOC, SVOC, BTEX, MTBE, Metals, and General Chemistry. Based on 2005 lab data, discussions with NMED and NMOCD are ongoing and sampling maybe changed*

POND #2

POND #2 was sampled on November 19, 2004 and analyzed for BTEX, MTBE, RCRA Metals, BOD, COD, and TDS. Lab results showed numbers below NMWQS on all parameters with the exception of Benzene, and TDS

RECOMMENDATION: *Giant Ciniza will continue to monitor on an annual basis for BTEX, MTBE, RCRA Metals, BOD, COD, and TDS. Moreover, in 2005 Giant will monitor above this point (pond 1) for any contaminants. A Hazardous Waste determination has been prepared and discussions with OCD and NMED are underway.*

PW #2

Well #2 was sampled on December 9, 2004 and analyzed for SOCs, VOCs, Heavy Metals, Cyanide, and Nitrates. Lab results showed numbers below the NMWQS on all parameters.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well according to the discharge plan for VOC, SVOC, Metals, Cyanide, and Nitrates. The next scheduled sampling will take place in 2008*

PW #4

Well #4 was sampled on August 4, 2004 and analyzed for SOCs, VOCs, Heavy Metals, Cyanide, and Nitrates. Lab results showed numbers below the NMWQS on all parameters.

RECOMMENDATION: *Giant Ciniza will continue to monitor this well according to the discharge plan for VOC, SVOC, Metals, Cyanide, and Nitrates and is scheduled for sampling in 2007*

PW #3

Well #3 was not scheduled for sampling in 2004

RECOMMENDATION: *Giant Ciniza will monitor this well according to the discharge plan. Sampling will be conducted every 3 years beginning in 2006*

OW-1 and OW-10

These wells will be visually checked on a quarterly basis starting the 4th quarter of 2004. Since the Discharge Plan Renewal was approved in the 4th quarter only one sample point was taken in 2004. OW-1 remains dry and OW-10 is at 2.95 feet.

RECOMMENDATION: *Giant Ciniza will continue to visually inspect these wells for artesian flow quarterly*

MW-4, MW-5, SMW-2 AND SMW-4

Per the Discharge Plan Renewal Application frequency of sampling shall be per RCRA post closure plan. No sampling was required in 2004

RECOMMENDATION: *Giant Ciniza will sample in 2005 (see RCRA post closure permit application, Figure E-1 "Post-Closure Sampling Schedule").*

VOLATILES 8021B

mg/L	DATE SAMPLED	OW #12	OW 13	OW 14	OW 29	OW 30	POND #2	GWM 1	WIOCC 20 NMAC 6.2,3103	MCL'S	EPA sug # MTBE
Benzene	08-Dec-04	<0.0005	<0.0005		<0.0005	<0.0005			0.01	0.005	
	09-Dec-04			0.23				0.0044			
	19-Nov-04						0.024	<0.001			
	28-Jul-04										
Toluene	22-Oct-03	<0.0005							0.75	1	
	23-Oct-03	<0.0005				<0.0005		<0.001			
	28-Jul-04										
	22-Oct-03	<0.0005				<0.0005					
EthylBen	08-Dec-04	<0.0005	<0.0005	0.0029	<0.0005	<0.0005		0.0021	0.75	0.7	
	19-Nov-04						0.02	0.0015			
	28-Jul-04										
	22-Oct-03	<0.0005				<0.0005					
Xylene	08-Dec-04	<0.0005	<0.0005	0.003	<0.0005	<0.0005		0.0024	0.62	10	
	19-Nov-04						0.11				
	28-Jul-04							0.0034			
	22-Oct-03	<0.0005				<0.0005					
MTBE	08-Dec-04	<0.0025	<0.0025	0.065	0.0025	0.0025		0.048			0.2
	19-Nov-04						0.11				
	22-Oct-03	<0.0025									
	23-Oct-03					<0.0027					

EPA METHOD 8021B VOLATILES

[illegible]

VOLATILES 8260B						
mg/L	DATE	WELL	WELL		WQCC 20 NMAC	MCL'S
	SAMPLED	Pw #2	Pw #4		6.2.3103	
Benzene	04-Aug-04		<0.001		0.01	0.005
	09-Dec-04	<0.001				
	04-Aug-04		<0.001			
Toluene	09-Dec-04	<0.001			0.75	1
	04-Aug-04		<0.001			
EthylBen	09-Dec-04	<0.001			0.75	0.7
	04-Aug-04		<0.001			
Xylene	04-Aug-04		<0.001		0.62	10
	19-Nov-04	0.005				
MTBE						

10

[illegible]

[illegible][illegible]

PILOT TRAVEL CENTER AND TRUCK STOP

mg/L	DATE SAMPLED	Results	Reporting Limit	Regulatory level
Arsenic	15-Sep-04	<0.5	0.5	5.00
	09-Dec-04	<0.5		
Barium	15-Sep-04	<5.0	5	100.00
	09-Dec-04	<5.0		
Cadmium	15-Sep-04	<0.1	0.1	1.00
	09-Dec-04	<0.1		
Cr	15-Sep-04	<0.20	0.2	5.00
	09-Dec-04	<0.20		
Lead	15-Sep-04	<0.5	0.5	5.00
	09-Dec-04	<0.5		
Se	15-Sep-04	<0.5	0.5	1.00
	09-Dec-04	<0.5		
Silver	15-Sep-04	<0.5	0.5	5.00
	09-Dec-04	<0.5		
Mercury	15-Sep-04	<0.02	0.002	0.20
	09-Dec-04	<0.002		

TCLP - EPA METHOD 1311

BOD PILOT TRAVEL CENTER AND TRUCK STOP

Date of Analysis	Results	Detection Limit
17-Sep-04	995	5
10-Dec-04	400	5

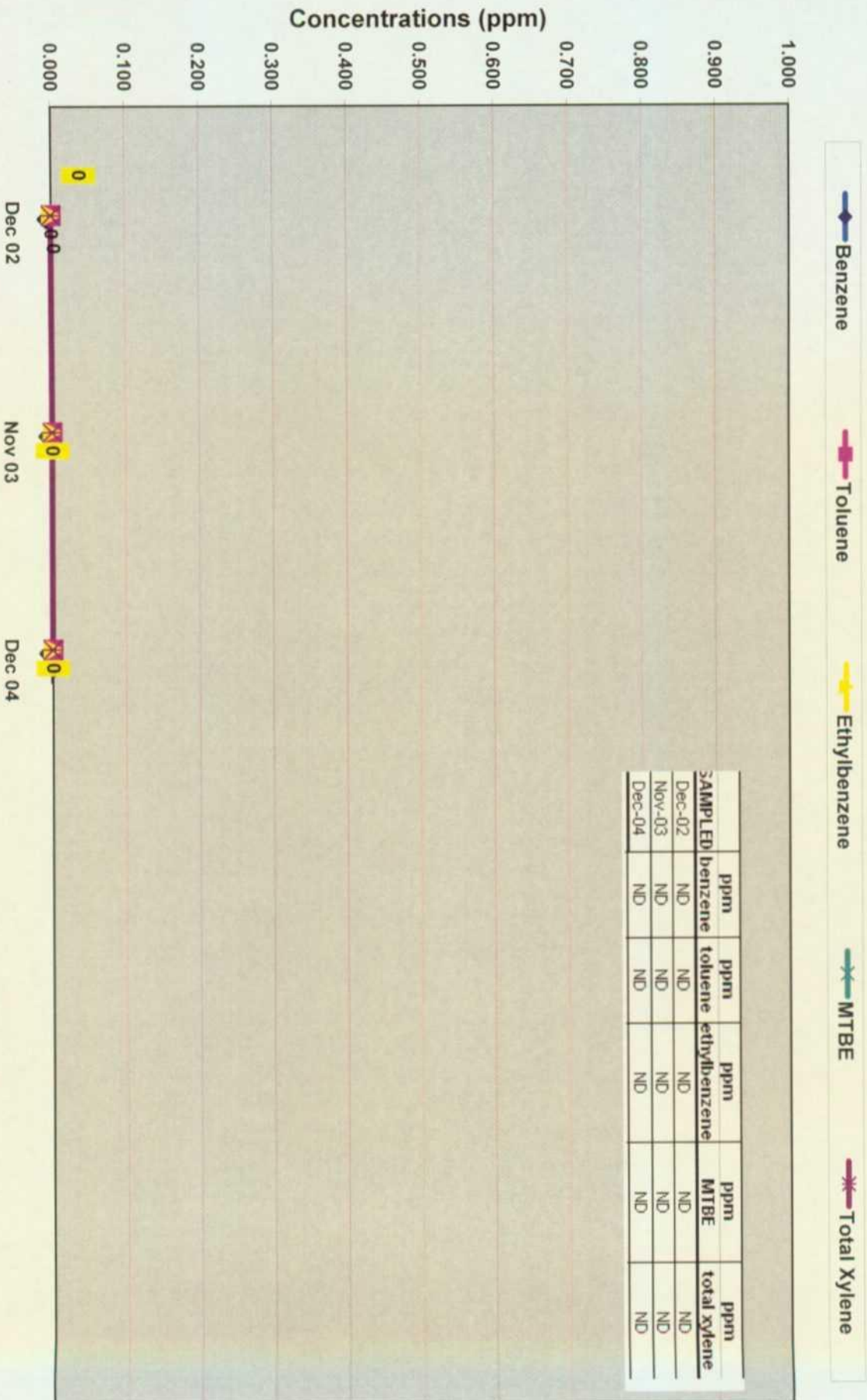
EPA 405.1

DISSOLVED METALS

mg/L	Date Sampled	OW 11	BW1A	BW1B	BW2A	BW2B	BW3B	BW1C	BW2C	BW3C	POND 2	WELL #2	WELL #4	MCL's	WACC 20
Se	08-Dec-04	0.005													
	04-Aug-04		DRY	DRY	<0.050	0.069	<0.050	<0.050	<0.050	<0.050	<0.050		<0.050	0.05	0.05
	19-Nov-04														
Silver	09-Dec-04														
	08-Dec-04	<0.0050													
	04-Aug-04		DRY	DRY	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050		<0.0050	0.05	0.05
Sodium	19-Nov-04														
	09-Dec-04														
	08-Dec-04	620													
Uranium	04-Aug-04		DRY	DRY	220	540	340	200	300	230					
	08-Dec-04														
	04-Aug-04		DRY	DRY	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10			<0.10	0.2	5.00
	09-Dec-04														

EPA METHOD 6010C

OW-11



SAMPLED	benzene	toluene	ethylbenzene	MTBE	total xylene
Dec-02	ND	ND	ND	ND	ND
Nov-03	ND	ND	ND	ND	ND
Dec-04	ND	ND	ND	ND	ND

OW-12

— Benzene

— Toluene

— Ethylbenzene

— MTBE

— Total Xylene

DATE	ppm	ppm	ppm	ppm	ppm
SAMPLED	benzene	toluene	ethylbenzene	MTBE	total xylene
Jul-02	ND	ND	ND	ND	ND
Oct-03	ND	ND	ND	ND	ND
Dec-04	ND	ND	ND	ND	ND

Concentrations (ppm)

1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0

0

0

0

JUL 02

OCT 03

DEC 04

OW-14

◆ Benzene

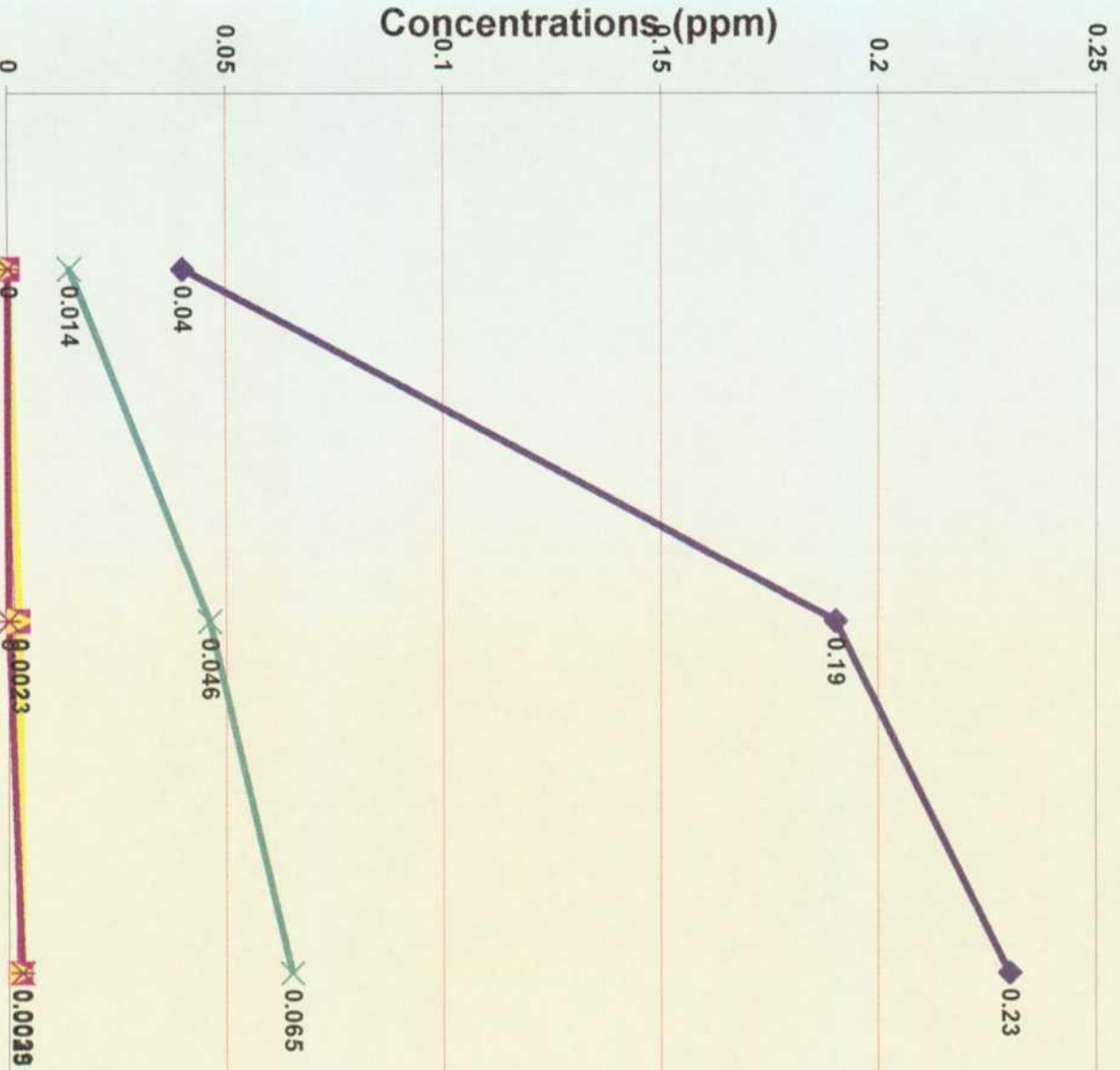
■ Toluene

◆ Ethylbenzene

✕ MTBE

✕ Total Xylene

DATE	ppm	ppm	ppm	ppm	
SAMPLED	benzene	toluene	ethylbenzene	MTBE	tot
Jul-02	0.04	ND	ND	0.014	
Nov-03	0.19	0.002	0.0023	0.046	
Dec-04	0.23	0.0025	0.0029	0.065	



OW-13

— Benzene

— Toluene

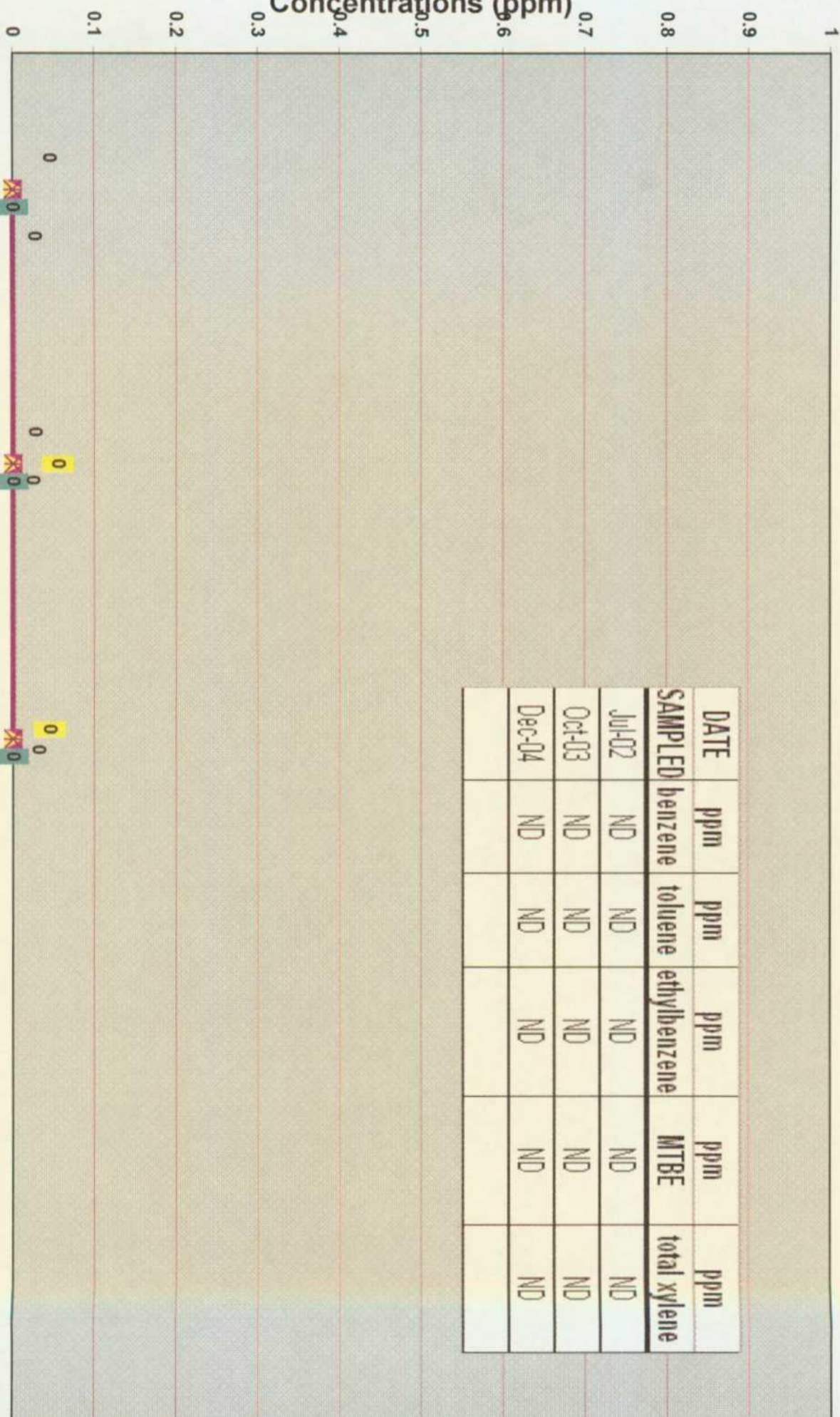
— Ethylbenzene

— MTBE

— Total Xylene

DATE	benzene	toluene	ethylbenzene	MTBE	total xylene
SAMPLED	benzene	toluene	ethylbenzene	MTBE	total xylene
Jul-02	ND	ND	ND	ND	ND
Oct-03	ND	ND	ND	ND	ND
Dec-04	ND	ND	ND	ND	ND

Concentrations (ppm)

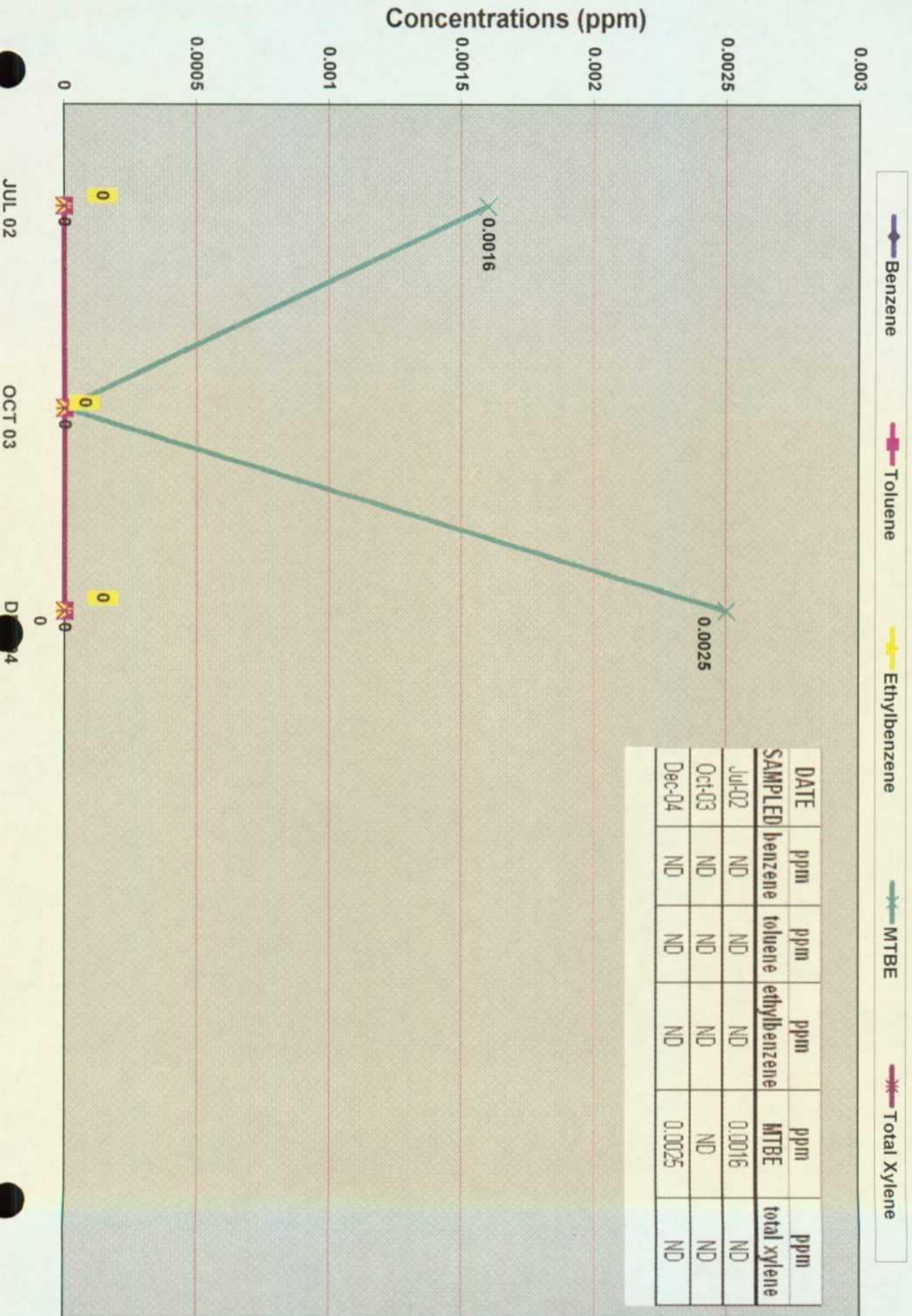


SEP 00

SEP 01

SEP 02

OW-29



OW-30

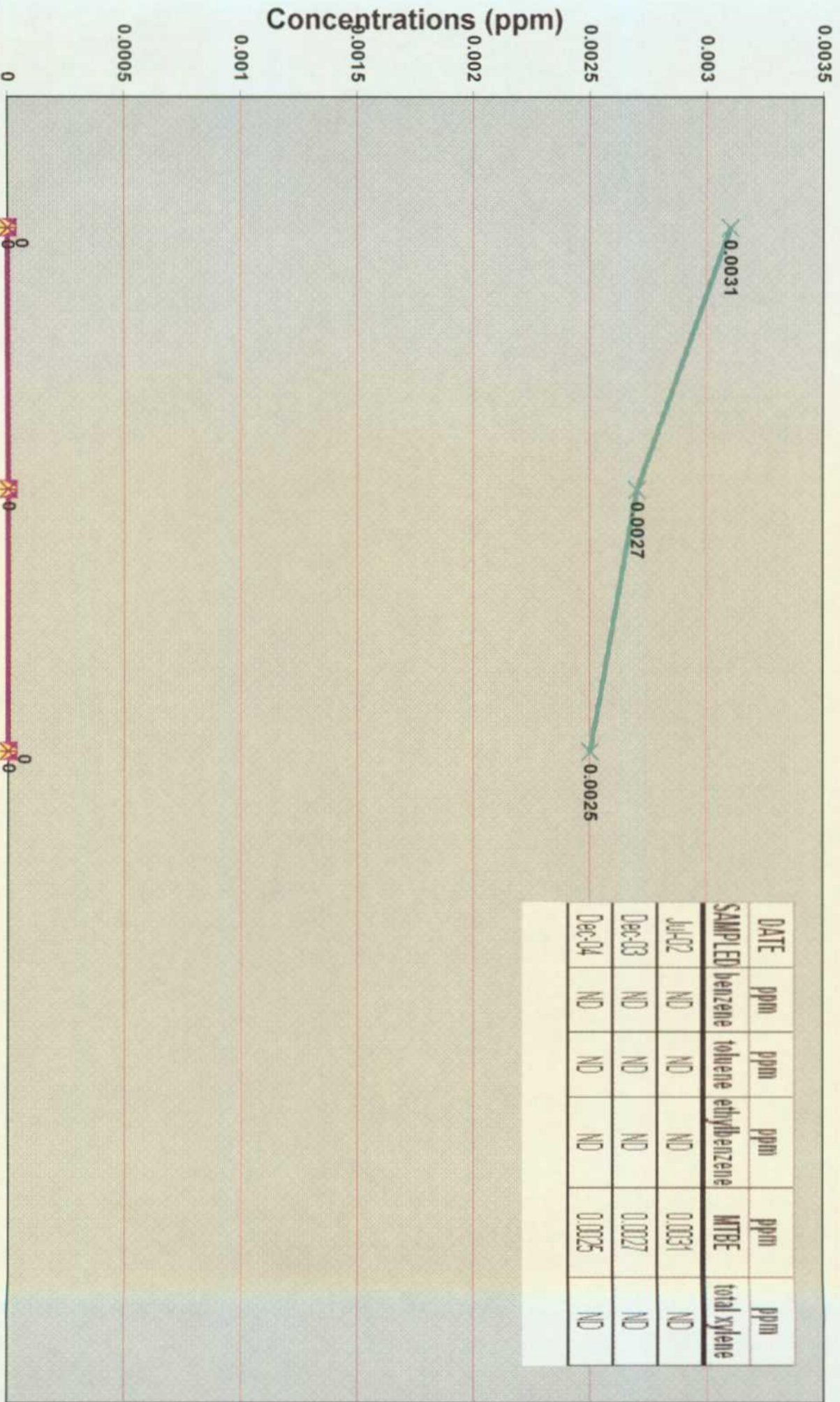
◆ Benzene

■ Toluene

◆ Ethylbenzene

✕ MTBE

✕ Total Xylene



MAR 03

AUG 03

MAR 04

POND #2

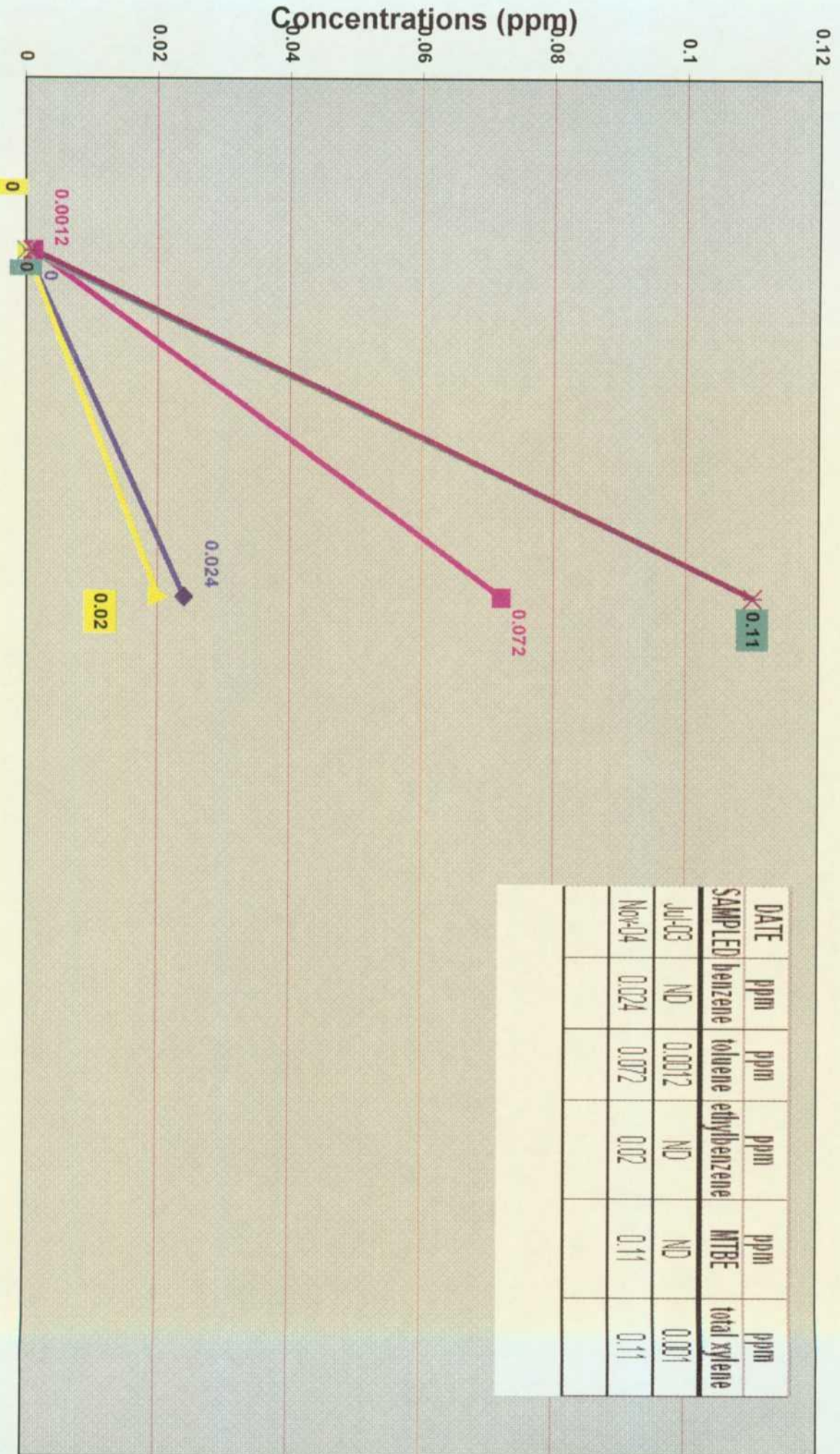
—◆— Benzene

—■— Toluene

—◆— Ethylbenzene

—✕— MTBE

—✱— Total Xylene



NOV 04

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412108
Project: Discharge Plan Fall 2004
Lab ID: 0412108-05

Client Sample ID: OW-11
Collection Date: 12/8/2004 3:00:00 PM

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	2.3	0.10		mg/L	1	12/10/2004 3:32:42 PM
Chloride	80	0.50		mg/L	5	12/13/2004 1:03:50 PM
Bromide	ND	0.10		mg/L	1	12/13/2004 12:47:01 PM
Phosphorus, Orthophosphate (As P)	ND	0.50	H	mg/L	1	12/10/2004 3:32:42 PM
Sulfate	1100	25		mg/L	50	12/13/2004 1:20:38 PM
Nitrate (As N)+Nitrite (As N)	ND	0.50		mg/L	5	12/13/2004 3:18:14 PM
EPA METHOD 310.1: ALKALINITY						Analyst: MAP
Alkalinity, Total (As CaCO ₃)	300	4.0		mg/L CaCO ₃	2	12/21/2004
Carbonate	12	4.0		mg/L CaCO ₃	2	12/21/2004
Bicarbonate	290	4.0		mg/L CaCO ₃	2	12/21/2004
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	1.0		µg/L	1	12/10/2004
Toluene	ND	1.0		µg/L	1	12/10/2004
Ethylbenzene	ND	1.0		µg/L	1	12/10/2004
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/10/2004
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/10/2004
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/10/2004
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/10/2004
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/10/2004
Naphthalene	ND	2.0		µg/L	1	12/10/2004
1-Methylnaphthalene	ND	4.0		µg/L	1	12/10/2004
2-Methylnaphthalene	ND	4.0		µg/L	1	12/10/2004
Acetone	ND	10		µg/L	1	12/10/2004
Bromobenzene	ND	1.0		µg/L	1	12/10/2004
Bromochloromethane	ND	1.0		µg/L	1	12/10/2004
Bromodichloromethane	ND	1.0		µg/L	1	12/10/2004
Bromoform	ND	1.0		µg/L	1	12/10/2004
Bromomethane	ND	2.0		µg/L	1	12/10/2004
2-Butanone	ND	10		µg/L	1	12/10/2004
Carbon disulfide	ND	10		µg/L	1	12/10/2004
Carbon Tetrachloride	ND	1.0		µg/L	1	12/10/2004
Chlorobenzene	ND	1.0		µg/L	1	12/10/2004
Chloroethane	ND	2.0		µg/L	1	12/10/2004
Chloroform	ND	1.0		µg/L	1	12/10/2004
Chloromethane	ND	1.0		µg/L	1	12/10/2004
2-Chlorotoluene	ND	1.0		µg/L	1	12/10/2004
4-Chlorotoluene	ND	1.0		µg/L	1	12/10/2004
cis-1,2-DCE	ND	1.0		µg/L	1	12/10/2004
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/10/2004
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/10/2004

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412108
Project: Discharge Plan Fall 2004
Lab ID: 0412108-05

Client Sample ID: OW-11
Collection Date: 12/8/2004 3:00:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Dibromochloromethane	ND	1.0		µg/L	1	12/10/2004
Dibromomethane	ND	2.0		µg/L	1	12/10/2004
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/10/2004
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/10/2004
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/10/2004
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/10/2004
1,1-Dichloroethane	ND	1.0		µg/L	1	12/10/2004
1,1-Dichloroethene	ND	1.0		µg/L	1	12/10/2004
1,2-Dichloropropane	ND	1.0		µg/L	1	12/10/2004
1,3-Dichloropropane	ND	1.0		µg/L	1	12/10/2004
2,2-Dichloropropane	ND	1.0		µg/L	1	12/10/2004
1,1-Dichloropropene	ND	1.0		µg/L	1	12/10/2004
Hexachlorobutadiene	ND	1.0		µg/L	1	12/10/2004
2-Hexanone	ND	10		µg/L	1	12/10/2004
Isopropylbenzene	ND	1.0		µg/L	1	12/10/2004
4-Isopropyltoluene	ND	1.0		µg/L	1	12/10/2004
4-Methyl-2-pentanone	ND	10		µg/L	1	12/10/2004
Methylene Chloride	ND	3.0		µg/L	1	12/10/2004
n-Butylbenzene	ND	1.0		µg/L	1	12/10/2004
n-Propylbenzene	ND	1.0		µg/L	1	12/10/2004
sec-Butylbenzene	ND	1.0		µg/L	1	12/10/2004
Styrene	ND	1.0		µg/L	1	12/10/2004
tert-Butylbenzene	ND	1.0		µg/L	1	12/10/2004
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/10/2004
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	12/10/2004
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/10/2004
trans-1,2-DCE	ND	1.0		µg/L	1	12/10/2004
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/10/2004
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/10/2004
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/10/2004
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/10/2004
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/10/2004
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/10/2004
Trichlorofluoromethane	ND	1.0		µg/L	1	12/10/2004
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/10/2004
Vinyl chloride	ND	1.0		µg/L	1	12/10/2004
Xylenes, Total	ND	1.0		µg/L	1	12/10/2004
Surr: 1,2-Dichloroethane-d4	99.8	74.7-113		%REC	1	12/10/2004
Surr: 4-Bromofluorobenzene	100	86.1-120		%REC	1	12/10/2004
Surr: Dibromofluoromethane	94.2	93.1-112		%REC	1	12/10/2004
Surr: Toluene-d8	107	83.1-112		%REC	1	12/10/2004

EPA METHOD 8270C: SEMIVOLATILES

Analyst: GAB

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412108
Project: Discharge Plan Fall 2004
Lab ID: 0412108-05

Client Sample ID: OW-11
Collection Date: 12/8/2004 3:00:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Acenaphthene	ND	10		µg/L	1	12/20/2004
Acenaphthylene	ND	10		µg/L	1	12/20/2004
Aniline	ND	10		µg/L	1	12/20/2004
Anthracene	ND	10		µg/L	1	12/20/2004
Azobenzene	ND	10		µg/L	1	12/20/2004
Benz(a)anthracene	ND	15		µg/L	1	12/20/2004
Benzo(a)pyrene	ND	10		µg/L	1	12/20/2004
Benzo(b)fluoranthene	ND	10		µg/L	1	12/20/2004
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/20/2004
Benzo(k)fluoranthene	ND	10		µg/L	1	12/20/2004
Benzoic acid	ND	50		µg/L	1	12/20/2004
Benzyl alcohol	ND	20		µg/L	1	12/20/2004
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/20/2004
Bis(2-chloroethyl)ether	ND	15		µg/L	1	12/20/2004
Bis(2-chloroisopropyl)ether	ND	15		µg/L	1	12/20/2004
Bis(2-ethylhexyl)phthalate	ND	15		µg/L	1	12/20/2004
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/20/2004
Butyl benzyl phthalate	ND	15		µg/L	1	12/20/2004
Carbazole	ND	10		µg/L	1	12/20/2004
4-Chloro-3-methylphenol	ND	20		µg/L	1	12/20/2004
4-Chloroaniline	ND	20		µg/L	1	12/20/2004
2-Chloronaphthalene	ND	10		µg/L	1	12/20/2004
2-Chlorophenol	ND	10		µg/L	1	12/20/2004
4-Chlorophenyl phenyl ether	ND	15		µg/L	1	12/20/2004
Chrysene	ND	15		µg/L	1	12/20/2004
Di-n-butyl phthalate	ND	10		µg/L	1	12/20/2004
Di-n-octyl phthalate	ND	15		µg/L	1	12/20/2004
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/20/2004
Dibenzofuran	ND	10		µg/L	1	12/20/2004
1,2-Dichlorobenzene	ND	10		µg/L	1	12/20/2004
1,3-Dichlorobenzene	ND	10		µg/L	1	12/20/2004
1,4-Dichlorobenzene	ND	10		µg/L	1	12/20/2004
3,3'-Dichlorobenzidine	ND	15		µg/L	1	12/20/2004
Diethyl phthalate	ND	10		µg/L	1	12/20/2004
Dimethyl phthalate	ND	10		µg/L	1	12/20/2004
2,4-Dichlorophenol	ND	10		µg/L	1	12/20/2004
2,4-Dimethylphenol	ND	10		µg/L	1	12/20/2004
4,6-Dinitro-2-methylphenol	ND	50		µg/L	1	12/20/2004
2,4-Dinitrophenol	ND	50		µg/L	1	12/20/2004
2,4-Dinitrotoluene	ND	10		µg/L	1	12/20/2004
2,6-Dinitrotoluene	ND	10		µg/L	1	12/20/2004
Fluoranthene	ND	10		µg/L	1	12/20/2004

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

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412108
Project: Discharge Plan Fall 2004
Lab ID: 0412108-05

Client Sample ID: OW-11
Collection Date: 12/8/2004 3:00:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Fluorene	ND	10		µg/L	1	12/20/2004
Hexachlorobenzene	ND	10		µg/L	1	12/20/2004
Hexachlorobutadiene	ND	10		µg/L	1	12/20/2004
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/20/2004
Hexachloroethane	ND	10		µg/L	1	12/20/2004
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/20/2004
Isophorone	ND	10		µg/L	1	12/20/2004
2-Methylnaphthalene	ND	10		µg/L	1	12/20/2004
2-Methylphenol	ND	15		µg/L	1	12/20/2004
3+4-Methylphenol	ND	10		µg/L	1	12/20/2004
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/20/2004
N-Nitrosodimethylamine	ND	10		µg/L	1	12/20/2004
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/20/2004
Naphthalene	ND	10		µg/L	1	12/20/2004
2-Nitroaniline	ND	50		µg/L	1	12/20/2004
3-Nitroaniline	ND	50		µg/L	1	12/20/2004
4-Nitroaniline	ND	20		µg/L	1	12/20/2004
Nitrobenzene	ND	10		µg/L	1	12/20/2004
2-Nitrophenol	ND	15		µg/L	1	12/20/2004
4-Nitrophenol	ND	50		µg/L	1	12/20/2004
Pentachlorophenol	ND	50		µg/L	1	12/20/2004
Phenanthrene	ND	10		µg/L	1	12/20/2004
Phenol	ND	10		µg/L	1	12/20/2004
Pyrene	ND	15		µg/L	1	12/20/2004
Pyridine	ND	30		µg/L	1	12/20/2004
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/20/2004
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/20/2004
2,4,6-Trichlorophenol	ND	15		µg/L	1	12/20/2004
Surr: 2,4,6-Tribromophenol	67.2	16.6-115		%REC	1	12/20/2004
Surr: 2-Fluorobiphenyl	74.9	37-95.7		%REC	1	12/20/2004
Surr: 2-Fluorophenol	63.1	9.54-89.8		%REC	1	12/20/2004
Surr: 4-Terphenyl-d14	95.1	47.9-115		%REC	1	12/20/2004
Surr: Nitrobenzene-d5	72.4	38-106		%REC	1	12/20/2004
Surr: Phenol-d6	45.1	10.7-63.4		%REC	1	12/20/2004

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: MAP

Specific Conductance	3000	0.010	µmhos/cm	1	12/21/2004
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EPA METHOD 7470: MERCURY

Analyst: CMC

Mercury	ND	0.00020	mg/L	1	12/21/2004
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EPA 6010C: TOTAL RECOVERABLE METALS

Analyst: NMO

Arsenic	ND	0.020	mg/L	1	12/16/2004 9:59:31 AM
Barium	ND	0.020	mg/L	1	12/16/2004 9:59:31 AM

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

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412108
Project: Discharge Plan Fall 2004
Lab ID: 0412108-05

Client Sample ID: OW-11
Collection Date: 12/8/2004 3:00:00 PM

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Cadmium	ND	0.0020		mg/L	1	12/16/2004 9:59:31 AM
Calcium	9.6	1.0		mg/L	1	12/16/2004 9:59:31 AM
Chromium	ND	0.0060		mg/L	1	12/16/2004 9:59:31 AM
Lead	ND	0.0050		mg/L	1	12/16/2004 9:59:31 AM
Magnesium	1.1	1.0		mg/L	1	12/16/2004 9:59:31 AM
Potassium	1.9	1.0		mg/L	1	12/16/2004 11:40:16 AM
Selenium	ND	0.050		mg/L	1	12/16/2004 9:59:31 AM
Silver	ND	0.0050		mg/L	1	12/16/2004 9:59:31 AM
Sodium	620	10		mg/L	10	12/16/2004 11:45:10 AM
EPA METHOD 150.1: PH						Analyst: MAP
pH	8.48	0.010		pH units	1	12/21/2004
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	1900	50		mg/L	1	12/17/2004
EPA METHOD 160.2: TSS						Analyst: MAP
Suspended Solids	ND	1.0		mg/L	1	12/14/2004

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

COVER LETTER

December 23, 2004

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 722-0210

RE: Discharge Plan Fall 2004

Order No.: 0412108

Dear Steve Morris:

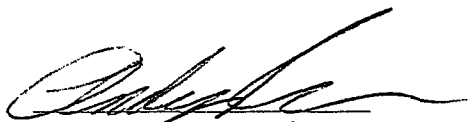
Hall Environmental Analysis Laboratory received 7 samples on 12/10/2004 for the analyses presented in the following report.

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



Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412108
Project: Discharge Plan Fall 2004
Lab ID: 0412108-01

Client Sample ID: OW-12
Collection Date: 12/8/2004 8:00:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	12/13/2004 10:28:04 AM
Benzene	ND	0.50		µg/L	1	12/13/2004 10:28:04 AM
Toluene	ND	0.50		µg/L	1	12/13/2004 10:28:04 AM
Ethylbenzene	ND	0.50		µg/L	1	12/13/2004 10:28:04 AM
Xylenes, Total	ND	0.50		µg/L	1	12/13/2004 10:28:04 AM
Surr: 4-Bromofluorobenzene	98.0	83.3-121		%REC	1	12/13/2004 10:28:04 AM

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

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412108
Project: Discharge Plan Fall 2004
Lab ID: 0412108-02

Client Sample ID: OW-13
Collection Date: 12/8/2004 9:00:00 AM

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	12/13/2004 10:58:13 AM
Benzene	ND	0.50		µg/L	1	12/13/2004 10:58:13 AM
Toluene	ND	0.50		µg/L	1	12/13/2004 10:58:13 AM
Ethylbenzene	ND	0.50		µg/L	1	12/13/2004 10:58:13 AM
Xylenes, Total	ND	0.50		µg/L	1	12/13/2004 10:58:13 AM
Surr: 4-Bromofluorobenzene	101	83.3-121		%REC	1	12/13/2004 10:58:13 AM

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

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412108
Project: Discharge Plan Fall 2004
Lab ID: 0412108-03

Client Sample ID: OW-29
Collection Date: 12/8/2004 1:00:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	12/13/2004 11:27:53 AM
Benzene	ND	0.50		µg/L	1	12/13/2004 11:27:53 AM
Toluene	ND	0.50		µg/L	1	12/13/2004 11:27:53 AM
Ethylbenzene	ND	0.50		µg/L	1	12/13/2004 11:27:53 AM
Xylenes, Total	ND	0.50		µg/L	1	12/13/2004 11:27:53 AM
Surr: 4-Bromofluorobenzene	97.5	83.3-121		%REC	1	12/13/2004 11:27:53 AM

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

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412108
Project: Discharge Plan Fall 2004
Lab ID: 0412108-04

Client Sample ID: OW-30
Collection Date: 12/8/2004 2:00:00 PM

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	12/13/2004 11:57:35 AM
Benzene	ND	0.50		µg/L	1	12/13/2004 11:57:35 AM
Toluene	ND	0.50		µg/L	1	12/13/2004 11:57:35 AM
Ethylbenzene	ND	0.50		µg/L	1	12/13/2004 11:57:35 AM
Xylenes, Total	ND	0.50		µg/L	1	12/13/2004 11:57:35 AM
Surr: 4-Bromofluorobenzene	97.5	83.3-121		%REC	1	12/13/2004 11:57:35 AM

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

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412108
Project: Discharge Plan Fall 2004
Lab ID: 0412108-06

Client Sample ID: OW-14
Collection Date: 12/9/2004 8:30:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	65	13		µg/L	5	12/14/2004 5:45:48 PM
Benzene	230	2.5		µg/L	5	12/14/2004 5:45:48 PM
Toluene	ND	2.5		µg/L	5	12/14/2004 5:45:48 PM
Ethylbenzene	2.9	2.5		µg/L	5	12/14/2004 5:45:48 PM
Xylenes, Total	3.0	2.5		µg/L	5	12/14/2004 5:45:48 PM
Surr: 4-Bromofluorobenzene	103	83.3-121		%REC	5	12/14/2004 5:45:48 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

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412108
Project: Discharge Plan Fall 2004
Lab ID: 0412108-07

Client Sample ID: GWM-1
Collection Date: 12/9/2004 1:30:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	48	5.0		µg/L	2	12/14/2004 6:15:26 PM
Benzene	4.4	1.0		µg/L	2	12/14/2004 6:15:26 PM
Toluene	3.2	1.0		µg/L	2	12/14/2004 6:15:26 PM
Ethylbenzene	2.1	1.0		µg/L	2	12/14/2004 6:15:26 PM
Xylenes, Total	2.4	1.0		µg/L	2	12/14/2004 6:15:26 PM
Surr: 4-Bromofluorobenzene	102	83.3-121		%REC	2	12/14/2004 6:15:26 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

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co

Work Order: 0412108

Project: Discharge Plan Fall 2004

QC SUMMARY REPORT

Method Blank

Sample ID	MBLK	Batch ID: R14012	Test Code: E300	Units: mg/L	Analysis Date	12/10/2004 12:11:13 P	Prep Date				
Client ID:		Run ID:	LC_041210A		SeqNo:	325811					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Bromide	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									
Nitrate (As N)+Nitrite (As N)	ND	0.1									

Sample ID	MBLK	Batch ID: R14012	Test Code: E300	Units: mg/L	Analysis Date	12/10/2004 6:54:25 PM	Prep Date				
Client ID:		Run ID:	LC_041210A		SeqNo:	325835					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND										
Chloride	ND										
Bromide	ND										
Phosphorus, Orthophosphate (As P)	ND										
Sulfate	ND										
Nitrate (As N)+Nitrite (As N)	ND										

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT: Giant Refining Co
Work Order: 0412108
Project: Discharge Plan Fall 2004

QC SUMMARY REPORT
 Method Blank

Sample ID	MBLK	Batch ID: R14035	Test Code: E300	Units: mg/L	Analysis Date	12/13/2004 10:49:21 A	Prep Date
Client ID:		Run ID: LC_041213A			SeqNo:	326327	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Fluoride		ND	0.1				
Chloride		ND	0.1				
Bromide		ND	0.1				
Phosphorus, Orthophosphate (As P)		ND	0.5				
Sulfate		ND	0.5				
Nitrate (As N)+Nitrite (As N)		ND	0.1				

Sample ID	MBLK	Batch ID: R14109	Test Code: E310.1	Units: mg/L CaCO3	Analysis Date	12/21/2004	Prep Date
Client ID:		Run ID: WC_041221C			SeqNo:	328071	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Total (As CaCO3)		ND	2				
Carbonate		ND	2				
Bicarbonate		ND	2				

Sample ID	Reagent Blank 5m	Batch ID: R14021	Test Code: SW8021	Units: µg/L	Analysis Date	12/13/2004 6:46:51 AM	Prep Date
Client ID:		Run ID: PIDFID_041213A			SeqNo:	326049	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Methyl tert-butyl ether (MTBE)		ND	2.5				
Benzene		ND	0.5				
Toluene		ND	0.5				
Ethylbenzene		ND	0.5				
Xylenes, Total		ND	0.5				
Surr: 4-Bromofluorobenzene		21.78	0	20	0	109	83.3 121 0

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits
 R - RPD outside accepted recovery limits

CLIENT: Giant Refining Co
Work Order: 0412108
Project: Discharge Plan Fall 2004

QC SUMMARY REPORT

Method Blank

Sample ID	Reagent Blank	Batch ID: R14039	Test Code: SW8021	Units: µg/L	Analysis Date	12/14/2004 10:14:54 A	Prep Date				
Client ID:			Run ID: PIDFID_041214A		SeqNo:	326488					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5									
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	20.39	0	20	0	102	83.3	121	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0412108
Project: Discharge Plan Fall 2004

QC SUMMARY REPORT
 Method Blank

Sample ID	mb-7051	Batch ID: 7051	Test Code: SW8270C	Units: µg/L	Analysis Date	Prep Date					
Client ID:			Run ID:	ELMO_041220A	SeqNo: 327616						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	10									
Acenaphthylene	ND	10									
Aniline	ND	10									
Anthracene	ND	10									
Azobenzene	ND	10									
Benz(a)anthracene	ND	15									
Benzo(a)pyrene	ND	10									
Benzo(b)fluoranthene	ND	10									
Benzo(g,h,i)perylene	ND	10									
Benzo(k)fluoranthene	ND	10									
Benzoic acid	ND	50									
Benzyl alcohol	ND	20									
Bis(2-chloroethoxy)methane	ND	10									
Bis(2-chloroethyl)ether	ND	15									
Bis(2-chloroisopropyl)ether	ND	15									
Bis(2-ethylhexyl)phthalate	ND	15									
4-Bromophenyl phenyl ether	ND	10									
Butyl benzyl phthalate	ND	15									
Carbazole	ND	10									
4-Chloro-3-methylphenol	ND	20									
4-Chloroaniline	ND	20									
2-Chloronaphthalene	ND	10									
2-Chlorophenol	ND	10									
4-Chlorophenyl phenyl ether	ND	15									
Chrysene	ND	15									
Di-n-butyl phthalate	ND	10									
Di-n-octyl phthalate	ND	15									
Dibenz(a,h)anthracene	ND	10									

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
Work Order: 0412108
Project: Discharge Plan Fall 2004

Dibenzofuran	ND	10
1,2-Dichlorobenzene	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
3,3'-Dichlorobenzidine	ND	15
Diethyl phthalate	ND	10
Dimethyl phthalate	ND	10
2,4-Dichlorophenol	ND	10
2,4-Dimethylphenol	ND	10
4,6-Dinitro-2-methylphenol	ND	50
2,4-Dinitrophenol	ND	50
2,4-Dinitrotoluene	ND	10
2,6-Dinitrotoluene	ND	10
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorobutadiene	ND	10
Hexachlorocyclopentadiene	ND	10
Hexachloroethane	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2-Methylnaphthalene	ND	10
2-Methylphenol	ND	15
3+4-Methylphenol	ND	10
N-Nitrosodi-n-propylamine	ND	10
N-Nitrosodimethylamine	ND	10
N-Nitrosodiphenylamine	ND	10
Naphthalene	ND	10
2-Nitroaniline	ND	50
3-Nitroaniline	ND	50
4-Nitroaniline	ND	20
Nitrobenzene	ND	10
2-Nitrophenol	ND	15

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Method Blank

Method Blank

CLIENT: Giant Refining Co

Work Order: 0412108

Project: Discharge Plan Fall 2004

4-Nitrophenol	ND	50
Perchlorobiphenol	ND	50
Phenanthrene	ND	10
Phenol	ND	10
Pyrene	ND	15
Pyridine	ND	30
1,1,2,4-Trichlorobenzene	ND	10
2,2,4,4,5-Trichlorophenol	ND	10
2,2,4,6-Trichlorophenol	ND	15
Surr: 2,4,6-Tribromophenol	165.9	0
Surr: 2-Fluorobiphenyl	81.66	0
Surr: 2-Fluorophenol	136.7	0
Surr: 4-Terphenyl-d14	103.3	0
Surr: Nitrobenzene-d5	80	0
Surr: Phenol-d6	102.6	0

[illegible]

Mercury

0.0002

0.0002

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

6

CLIENT: Giant Refining Co
Work Order: 0412108
Project: Discharge Plan Fall 2004

QC SUMMARY REPORT
 Method Blank

Sample ID	MB-7069	Batch ID: 7069	Test Code: SW6010A	Units: mg/L	Analysis Date	12/16/2004 11:30:41 A	Prep Date	12/15/2004			
Client ID:			Run ID:	ICP_041216A	SeqNo:	326705					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02									
Barium	ND	0.02									
Cadmium	ND	0.002									
Calcium	ND	1									
Chromium	ND	0.006									
Lead	ND	0.005									
Magnesium	ND	1									
Potassium	0.6816	1									J
Selenium	ND	0.05									
Silver	ND	0.005									
Sodium	0.6739	1									J

Sample ID	MB-7069	Batch ID: 7069	Test Code: SW6010A	Units: mg/L	Analysis Date	12/16/2004 9:09:29 AM	Prep Date	12/15/2004				
Client ID:		Run ID: ICP_041216A			SeqNo:	326715						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		ND	0.02									
Barium		ND	0.02									
Cadmium		ND	0.002									
Calcium		ND	1									
Chromium		ND	0.006									
Magnesium		ND	1									
Selenium		ND	0.05									
Silver		0.002113	0.005									J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

Method Blank

CLIENT: Giant Refining Co

Work Order: 0412108

Project: Discharge Plan Fall 2004

Sample ID	MB-7069	Batch ID:	7069	Test Code:	SW6010A	Units:	mg/L	Analysis Date	12/17/2004 4:08:01 PM	Prep Date	12/15/2004
Client ID:		Run ID:	ICP_041217B	SeqNo:	327026						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Lead		ND	0.005								Qual

Sample ID	MB-7068	Batch ID:	7068	Test Code:	E160.1	Units:	mg/L	Analysis Date	12/17/2004	Prep Date	12/15/2004
Client ID:		Run ID:	WC_041217A					SeqNo:	327015		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit
Total Dissolved Solids		ND	50								Qual

Sample ID	MBLK	Batch ID:	R14034	Test Code:	E160.2	Units:	mg/L	Analysis Date	12/14/2004	Prep Date
Cifent ID:				Run ID:	WC_041214D			SeqNo:	326317	
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPDLimit
Suspended Solids		ND		1						Qual

Suspended Solids

ND 1

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
 Work Order: 0412108
 Project: Discharge Plan Fall 2004

QC SUMMARY REPORT

Method Blank

Sample ID	5mL rb	Batch ID: R14014	Test Code: SW8260B	Units: µg/L	Analysis Date	12/10/2004	Prep Date				
Client ID:		Run ID:	NEPTUNE_041210A		SeqNo:	325871					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Toluene	ND	1									
Ethylbenzene	ND	1									
Methyl tert-butyl ether (MTBE)	ND	1									
1,2,4-Trimethylbenzene	ND	1									
1,3,5-Trimethylbenzene	ND	1									
1,2-Dichloroethane (EDC)	ND	1									
1,2-Dibromoethane (EDB)	ND	1									
Naphthalene	ND	2									
1-Methylnaphthalene	ND	4									
2-Methylnaphthalene	ND	4									
Acetone	ND	10									
Bromobenzene	ND	1									
Bromochloromethane	ND	1									
Bromodichloromethane	ND	1									
Bromoform	ND	1									
Bromomethane	ND	2									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1									
Chlorobenzene	ND	1									
Chloroethane	ND	2									
Chloroform	ND	1									
Chloromethane	ND	1									
2-Chlorotoluene	ND	1									
4-Chlorotoluene	ND	1									
cis-1,2-DCE	ND	1									

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
 Work Order: 0412108
 Project: Discharge Plan Fall 2004

cis-1,3-Dichloropropene	ND	1
1,2-Dibromo-3-chloropropane	ND	2
Dibromochloromethane	ND	1
Dibromomethane	ND	2
1,2-Dichlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
Dichlorodifluoromethane	ND	1
1,1-Dichloroethane	ND	1
1,1-Dichloroethene	ND	1
1,2-Dichloropropane	ND	1
1,3-Dichloropropane	ND	1
2,2-Dichloropropane	ND	1
1,1-Dichloropropene	ND	1
Hexachlorobutadiene	ND	1
2-Hexanone	ND	10
Isopropylbenzene	ND	1
4-Isopropyltoluene	ND	1
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3
n-Butylbenzene	ND	1
n-Propylbenzene	ND	1
sec-Butylbenzene	ND	1
Styrene	ND	1
tert-Butylbenzene	ND	1
1,1,1,2-Tetrachloroethane	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Tetrachloroethene (PCE)	ND	1
trans-1,2-DCE	ND	1
trans-1,3-Dichloropropene	ND	1
1,2,3-Trichlorobenzene	ND	1
1,2,4-Trichlorobenzene	ND	1
1,1,1-Trichloroethane	ND	1

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
 Work Order: 0412108
 Project: Discharge Plan Fall 2004

QC SUMMARY REPORT

Sample Duplicate

Sample ID	0412108-05C DUP	Batch ID: R14034	Test Code: E160.2	Units: mg/L	Analysis Date	12/14/2004	Prep Date					
Client ID:	OW-11	Run ID:	WC_041214D		SeqNo:	326322						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids		ND	1	0	0	0	0	0	0	0	0	15

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
 Work Order: 0412108
 Project: Discharge Plan Fall 2004

QC SUMMARY REPORT
 Sample Matrix Spike

Sample ID	0412108-01a.ms	Batch ID: R14021	Test Code: SW8021	Units: µg/L	Analysis Date	12/13/2004 1:56:21 PM	Prep Date				
Client ID:	OW-12		Run ID:	PIDFID_041213A	SeqNo:	326098					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	34.8	2.5	40	0	87.0	64.5	133	0			
Benzene	22.5	0.5	20	0	113	88.7	114	0			
Toluene	19.82	0.5	20	0	99.1	89.3	112	0			
Ethylbenzene	19.44	0.5	20	0	97.2	88.6	113	0			
Xylenes, Total	59.8	0.5	60	0	99.7	89.4	112	0			
Surr: 4-Bromofluorobenzene	24.12	0	24	0	101	83.3	121	0			

Sample ID	0412108-01a msd	Batch ID: R14021	Test Code: SW8021	Units: µg/L	Analysis Date 12/13/2004 2:26:04 PM		Prep Date				
Client ID: OW-12			Run ID: PIDFID_041213A		SeqNo: 326099						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	35.8	2.5	40	0	89.5	64.5	133	34.8	2.83	28	
Benzene	22.49	0.5	20	0	112	88.7	114	22.5	0.0480	27	
Toluene	20.39	0.5	20	0	102	89.3	112	19.82	2.84	19	
Ethylbenzene	20.01	0.5	20	0	100	88.6	113	19.44	2.86	10	
Xylenes, Total	59.87	0.5	60	0	99.8	89.4	112	59.8	0.118	13	
Surr: 4-Bromofluorobenzene	24.07	0	24	0	100	83.3	121	24.12	0.212	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Date: 23-Dec-04

Hall Environmental Analysis Laboratory

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Giant Refining Co
 Work Order: 0412108
 Project: Discharge Plan Fall 2004

Sample ID	LCS	Batch ID: R14012	Test Code: E300	Units: mg/L	Analysis Date	12/10/2004 12:27:58 P	Prep Date				
Client ID:		Run ID:	LC_041210A		SeqNo:	325812					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4732	0.1	0.5	0	94.6	90	110	0			
Chloride	4.635	0.1	5	0	92.7	90	110	0			
Bromide	2.147	0.1	2.5	0	85.9	90	110	0			
Phosphorus, Orthophosphate (As P)	4.79	0.5	5	0	95.8	90	110	0			
Sulfate	9.623	0.5	10	0	96.2	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.266	0.1	3.5	0	93.3	90	110	0			S

Sample ID	LCS	Batch ID: R14035	Test Code: E300	Units: mg/L	Analysis Date	12/13/2004 11:06:10 A	Prep Date				
Client ID:		Run ID:	LC_041213A		SeqNo:	326328					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.8197	0.1	0.5	0	164	90	110	0			S
Chloride	4.876	0.1	5	0	97.5	90	110	0			
Bromide	2.338	0.1	2.5	0	93.5	90	110	0			
Phosphorus, Orthophosphate (As P)	4.799	0.5	5	0	96.0	90	110	0			
Sulfate	9.978	0.5	10	0	99.8	90	110	0			
Nitrate (As N)+Nitrite (As N)	3.44	0.1	3.5	0	98.3	90	110	0			

Sample ID	BTEX std 87.5ng	Batch ID: R14039	Test Code: SW8021	Units: µg/L	Analysis Date	12/14/2004 1:47:13 PM	Prep Date				
Client ID:		Run ID: PIDFID_041214A			SeqNo: 326505						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	31.86	2.5	35	0	91.0	64.5	133	0			
Benzene	19.12	0.5	17.5	0	109	88.7	114	0			
Toluene	16.9	0.5	17.5	0	96.6	89.3	112	0			
Ethylbenzene	16.79	0.5	17.5	0	95.9	88.6	113	0			
Xylenes, Total	52.14	0.5	52.5	0	99.3	89.4	112	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Giant Refining Co
 Work Order: 0412108
 Project: Discharge Plan Fall 2004

Sample ID	100ng Ics	Batch ID: R14014	Test Code: SW8260B	Units: µg/L	Analysis Date	12/10/2004	Prep Date				
Client ID:			Run ID: NEPTUNE_041210A		SeqNo: 325880						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	22.46	1	20	0	112	75.3	128	0			
Toluene	20.79	1	20	0	104	77.8	122	0			
Chlorobenzene	19.35	1	20	0	96.8	76.2	130	0			
1,1-Dichloroethene	21.57	1	20	0	108	70.2	119	0			
Trichloroethene (TCE)	20.35	1	20	0	102	76.9	130	0			

Sample ID	Ics-7051	Batch ID: 7051	Test Code: SW8270C	Units: µg/L	Analysis Date	12/20/2004	Prep Date	12/13/2004			
Client ID:			Run ID: ELMO_041220A		SeqNo:	327617					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	88.82	10	100	0	88.8	11	123	0			
4-Chloro-3-methylphenol	184.5	20	200	0	92.3	15.4	119	0			
2-Chlorophenol	170.6	10	200	0	85.3	12.2	122	0			
1,4-Dichlorobenzene	73.24	10	100	0	73.2	16.9	100	0			
2,4-Dinitrotoluene	96.12	10	100	0	96.1	13	138	0			
N-Nitrosodi-n-propylamine	80.12	10	100	0	80.1	9.93	122	0			
4-Nitrophenol	71.12	50	200	0	35.6	-20.5	87.4	0			
Pentachlorophenol	178.6	50	200	0	89.3	-0.355	114	0			
Phenol	99.48	10	200	0	49.7	7.53	73.1	0			
Pyrene	95.36	15	100	0	95.4	12.6	140	0			
1,2,4-Trichlorobenzene	77.7	10	100	0	77.7	17.4	98.7	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: Giant Refining Co
 Work Order: 0412108
 Project: Discharge Plan Fall 2004

Sample ID	Batch ID: 7051	Test Code: SW8270C	Units: µg/L	Analysis Date 12/20/2004				Prep Date 12/13/2004			
Client ID:				Run ID: ELMO_041220A	SeqNo: 327618						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	74.96	10	100	0	75.0	11	123	88.82	16.9	30.5	
4-Chloro-3-methylphenol	176	20	200	0	88.0	15.4	119	184.5	4.70	28.6	
2-Chlorophenol	170.7	10	200	0	85.4	12.2	122	170.6	0.0938	107	
1,4-Dichlorobenzene	72.46	10	100	0	72.5	16.9	100	73.24	1.07	62.1	
2,4-Dinitrotoluene	85.12	10	100	0	85.1	13	138	96.12	12.1	14.7	
N-Nitrosodi-n-propylamine	75.04	10	100	0	75.0	9.93	122	80.12	6.55	30.3	
4-Nitrophenol	91.7	50	200	0	45.9	12.5	87.4	71.12	25.3	36.3	
Pentachlorophenol	164.4	50	200	0	82.2	3.55	114	178.6	8.31	49	
Phenol	91.52	10	200	0	45.8	7.53	73.1	99.48	8.34	52.4	
Pyrene	89.96	15	100	0	90.0	12.6	140	95.36	5.83	16.3	
1,2,4-Trichlorobenzene	73.5	10	100	0	73.5	17.4	98.7	77.7	5.56	36.4	

Sample ID	LCS-7107	Batch ID: 7107	Test Code: SW7470	Units: mg/L	Analysis Date 12/21/2004		Prep Date 12/21/2004				
Client ID:			Run ID: MI-LA254_041221B		SeqNo: 327859						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004669	0.0002	0.005	0	93.4	75.2	134	0			

Sample ID	LCSD-7107	Batch ID: 7107	Test Code: SW7470	Units: mg/L	Analysis Date 12/21/2004		Prep Date 12/21/2004				
Client ID:			Run ID: MI-LA254_041221B		SeqNo: 327883						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00461	0.0002	0.005	0	92.2	75.2	134	0.004669	1.27	0	

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received:

12/10/2004

Work Order Number 0412108

Received by AT

Checklist completed by

Signature

Date

12/10/04

Matrix

Carrier name

Client drop-off

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 - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

3°

4° C ± 2 Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding

Comments:

Corrective Action

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

ANALYSIS REQUEST

Accreditation Applied:

NELAC ☐ USACE ☐

Other:

Project Name:

Client: Giant Lining

Company - Linotype

Address: Route 3 Box 7

Falling NM 87301

Project Manager:

Steve Morris

Sampler.

Sampler: Steve Roberts

Sample Temperature: 2

Sampler: Steve Roberts

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative			HEAL No.
					HCl ₂	HNO ₃	HCl	
12/8/04	0800	H ₂ O	QW-12	3			✓	041208-1
"	0900	"	QW-13	3			✓	-2
"	1300	"	QW-29	3			✓	-3
"	1400	"	QW-30	3			✓	-4
"	1500	"	QW-11	8				-5
12-9-04	0830	"	QW-14	3			✓	-6
"	1330	"	GW-1	3				-7
Date: 12/10/04	Time: 1020	Relinquished By: (Signature) <i>Stb C Morris</i>	Remarks: <i>Stb</i>	12/10/04				
Date:	Time:	Relinquished By: (Signature)	Remarks:					

Remarks:

marks: * pH Cond, TDS, TSS, Anions, Alkalinity, Cation/Anion ratio Cations,



COVER LETTER

August 03, 2004

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 722-0210

RE: EP-1 New Well

Order No.: 0407300

Dear Steve Morris:

Hall Environmental Analysis Laboratory received 1 sample on 7/29/2004 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



Hall Environmental Analysis Laboratory

Date: 03-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: EP-1-New Well

Lab Order: 0407300

Collection Date: 7/28/2004 8:00:00 AM

Project: EP-1 New Well

Lab ID: 0407300-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	ND	1.0		µg/L	2	8/2/2004 8:46:10 PM
Toluene	ND	1.0		µg/L	2	8/2/2004 8:46:10 PM
Ethylbenzene	1.5	1.0		µg/L	2	8/2/2004 8:46:10 PM
Xylenes, Total	3.4	1.0		µg/L	2	8/2/2004 8:46:10 PM
Surr: 4-Bromofluorobenzene	105	74-118		%REC	2	8/2/2004 8:46:10 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

Hall Environmental Analysis Laboratory

Date: 03-Aug-04

CLIENT: Giant Refining Co
Work Order: 0407300
Project: EP-1 New Well

QC SUMMARY REPORT

Method Blank

Sample ID	Reagent Blank 5m	Batch ID: R12630	Test Code: SW8021	Units: µg/L	Analysis Date 8/2/2004 8:00:14 AM	Prep Date					
Client ID:			Run ID: PIDFID_040802A		SeqNo: 292874						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	20.61	0	20	0	103	74	118	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits /

Hall Environmental Analysis Laboratory

Date: 03-Aug-04

CLIENT: Giant Refining Co
Work Order: 0407300
Project: EP-1 New Well

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	BTEX Std 100ng	Batch ID: R12630	Test Code: SW8021	Units: µg/L	Analysis Date	8/2/2004 9:00:53 AM	Prep Date				
Client ID:			Run ID: PIDFID_040802A		SeqNo:	292886					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.36	0.5	20	0	96.8	81.3	121	0			
Toluene	20.52	0.5	20	0	103	84.9	118	0			
Ethylbenzene	20.4	0.5	20	0	102	53.8	149	0			
Xylenes, Total	61.56	0.5	60	0	103	83.1	122	0			

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN

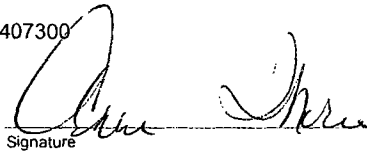
Date and Time Received:

7/29/2004

Work Order Number 0407300

Received by AT

Checklist completed by



Date

7/29/04

Matrix

Carrier name FedEx

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 - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

8°

4° C ± 2 Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenviromental.com

ANALYSIS REQUEST

COVER LETTER

August 30, 2004

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 722-0210

RE: Boundry Well Initial Sampling

Order No.: 0408039

Dear Steve Morris:

Hall Environmental Analysis Laboratory received 7 samples on 8/5/2004 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



Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co
Project: Boundry Well Initial Sampling
Lab Order: 0408039

CASE NARRATIVE

Analytical Comments for METHOD 8015GRO_W, SAMPLE 0408039-03a: Necessary dilution due to foamy nature of sample.

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-3-C

Lab Order: 0408039

Collection Date: 8/4/2004 9:00:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.95	0.10		mg/L	1	8/5/2004 2:13:33 PM
Chloride	25	0.10		mg/L	1	8/5/2004 2:13:33 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/5/2004 2:13:33 PM
Bromide	1.2	0.10		mg/L	1	8/5/2004 2:13:33 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/5/2004 2:13:33 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/5/2004 2:13:33 PM
Sulfate	440	25		mg/L	50	8/6/2004 5:27:47 PM
EPA METHOD 310.1: ALKALINITY						Analyst: MAP
Alkalinity, Total (As CaCO ₃)	220	4.0		mg/L CaCO ₃	2	8/16/2004
Carbonate	ND	4.0		mg/L CaCO ₃	2	8/16/2004
Bicarbonate	220	4.0		mg/L CaCO ₃	2	8/16/2004
EPA METHOD 504.1: EDB						Analyst: SCC
1,2-Dibromoethane	ND	0.010		µg/L	1	8/6/2004 12:55:54 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/14/2004 10:20:38 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/14/2004 10:20:38 PM
Surr: DNOP	112	58-140		%REC	1	8/14/2004 10:20:38 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: BDH
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/12/2004 11:34:32 AM
Surr: BFB	92.7	74-118		%REC	1	8/12/2004 11:34:32 AM
EPA METHOD 8082: PCB'S						Analyst: JMP
Aroclor 1016	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1221	ND	5.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1232	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1242	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1248	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1254	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1260	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Surr: Decachlorobiphenyl	102	45.3-140		%REC	1	8/24/2004 6:08:36 AM
Surr: Tetrachloro-m-xylene	80.0	28.1-139		%REC	1	8/24/2004 6:08:36 AM
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	5.2	1.0		µg/L	1	8/10/2004
Toluene	1.0	1.0		µg/L	1	8/10/2004
Ethylbenzene	ND	1.0		µg/L	1	8/10/2004
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/10/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408039
Project: Boundry Well Initial Sampling
Lab ID: 0408039-04

Client Sample ID: BW-2-A
Collection Date: 8/4/2004 11:30:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	1.2	0.10		mg/L	1	8/5/2004 3:03:54 PM
Chloride	40	0.50		mg/L	5	8/6/2004 6:01:24 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/5/2004 3:03:54 PM
Bromide	0.40	0.10		mg/L	1	8/5/2004 3:03:54 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/5/2004 3:03:54 PM
Phosphorus, Orthophosphate (As P)	0.57	0.50		mg/L	1	8/5/2004 3:03:54 PM
Sulfate	9.6	0.50		mg/L	1	8/5/2004 3:03:54 PM
EPA METHOD 310.1: ALKALINITY						Analyst: MAP
Alkalinity, Total (As CaCO ₃)	790	4.0		mg/L CaCO ₃	2	8/16/2004
Carbonate	40	4.0		mg/L CaCO ₃	2	8/16/2004
Bicarbonate	750	4.0		mg/L CaCO ₃	2	8/16/2004
EPA METHOD 504.1: EDB						Analyst: SCC
1,2-Dibromoethane	ND	0.010		µg/L	1	8/6/2004 2:01:46 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/14/2004 11:52:06 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/14/2004 11:52:06 PM
Surr: DNOP	118	58-140		%REC	1	8/14/2004 11:52:06 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: BDH
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/12/2004 1:05:56 PM
Surr: BFB	95.9	74-118		%REC	1	8/12/2004 1:05:56 PM
EPA METHOD 8082: PCB'S						Analyst: JMP
Aroclor 1016	ND	1.0		µg/L	1	8/24/2004 8:26:16 AM
Aroclor 1221	ND	5.0		µg/L	1	8/24/2004 8:26:16 AM
Aroclor 1232	ND	1.0		µg/L	1	8/24/2004 8:26:16 AM
Aroclor 1242	ND	1.0		µg/L	1	8/24/2004 8:26:16 AM
Aroclor 1248	ND	1.0		µg/L	1	8/24/2004 8:26:16 AM
Aroclor 1254	ND	1.0		µg/L	1	8/24/2004 8:26:16 AM
Aroclor 1260	ND	1.0		µg/L	1	8/24/2004 8:26:16 AM
Surr: Decachlorobiphenyl	103	45.3-140		%REC	1	8/24/2004 8:26:16 AM
Surr: Tetrachloro-m-xylene	72.4	28.1-139		%REC	1	8/24/2004 8:26:16 AM
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	1.0		µg/L	1	8/10/2004
Toluene	ND	1.0		µg/L	1	8/10/2004
Ethylbenzene	ND	1.0		µg/L	1	8/10/2004
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/10/2004

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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-A

Lab Order: 0408039

Collection Date: 8/4/2004 11:30:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-04

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/10/2004
Naphthalene	ND	2.0		µg/L	1	8/10/2004
1-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
2-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
Acetone	ND	10		µg/L	1	8/10/2004
Bromobenzene	ND	1.0		µg/L	1	8/10/2004
Bromochloromethane	ND	1.0		µg/L	1	8/10/2004
Bromodichloromethane	ND	1.0		µg/L	1	8/10/2004
Bromoform	ND	1.0		µg/L	1	8/10/2004
Bromomethane	ND	2.0		µg/L	1	8/10/2004
2-Butanone	ND	10		µg/L	1	8/10/2004
Carbon disulfide	ND	10		µg/L	1	8/10/2004
Carbon Tetrachloride	ND	1.0		µg/L	1	8/10/2004
Chlorobenzene	ND	1.0		µg/L	1	8/10/2004
Chloroethane	ND	2.0		µg/L	1	8/10/2004
Chloroform	ND	1.0		µg/L	1	8/10/2004
Chloromethane	ND	1.0		µg/L	1	8/10/2004
2-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
4-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
cis-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/10/2004
Dibromochloromethane	ND	1.0		µg/L	1	8/10/2004
Dibromomethane	ND	2.0		µg/L	1	8/10/2004
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,3-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
2,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
Hexachlorobutadiene	ND	1.0		µg/L	1	8/10/2004
2-Hexanone	ND	10		µg/L	1	8/10/2004
Isopropylbenzene	ND	1.0		µg/L	1	8/10/2004
4-Isopropyltoluene	ND	1.0		µg/L	1	8/10/2004
4-Methyl-2-pentanone	ND	10		µg/L	1	8/10/2004
Methylene Chloride	ND	3.0		µg/L	1	8/10/2004
n-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
n-Propylbenzene	ND	1.0		µg/L	1	8/10/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-A

Lab Order: 0408039

Collection Date: 8/4/2004 11:30:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-04

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
sec-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
Styrene	ND	1.0		µg/L	1	8/10/2004
tert-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/10/2004
trans-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/10/2004
Trichlorofluoromethane	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/10/2004
Vinyl chloride	ND	1.0		µg/L	1	8/10/2004
Xylenes, Total	ND	1.0		µg/L	1	8/10/2004
Surr: 1,2-Dichloroethane-d4	95.1	70.6-124		%REC	1	8/10/2004
Surr: 4-Bromofluorobenzene	102	76.4-130		%REC	1	8/10/2004
Surr: Dibromofluoromethane	107	67.2-131		%REC	1	8/10/2004
Surr: Toluene-d8	99.1	82.1-123		%REC	1	8/10/2004

EPA METHOD 8270D: SEMIVOLATILES

Analyst: GAB

Acenaphthene	ND	50		µg/L	1	8/23/2004
Acenaphthylene	ND	50		µg/L	1	8/23/2004
Aniline	ND	50		µg/L	1	8/23/2004
Anthracene	ND	50		µg/L	1	8/23/2004
Azobenzene	ND	50		µg/L	1	8/23/2004
Benz(a)anthracene	ND	75		µg/L	1	8/23/2004
Benzo(a)pyrene	ND	50		µg/L	1	8/23/2004
Benzo(b)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzo(g,h,i)perylene	ND	50		µg/L	1	8/23/2004
Benzo(k)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzoic acid	ND	250		µg/L	1	8/23/2004
Benzyl alcohol	ND	100		µg/L	1	8/23/2004
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	8/23/2004
Bis(2-chloroethyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-chloroisopropyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-ethylhexyl)phthalate	ND	75		µg/L	1	8/23/2004
4-Bromophenyl phenyl ether	ND	50		µg/L	1	8/23/2004
Butyl benzyl phthalate	ND	75		µg/L	1	8/23/2004
Carbazole	ND	50		µg/L	1	8/23/2004
4-Chloro-3-methylphenol	ND	100		µg/L	1	8/23/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-A

Lab Order: 0408039

Collection Date: 8/4/2004 11:30:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-04

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
4-Chloroaniline	ND	100		µg/L	1	8/23/2004
2-Chloronaphthalene	ND	50		µg/L	1	8/23/2004
2-Chlorophenol	ND	50		µg/L	1	8/23/2004
4-Chlorophenyl phenyl ether	ND	75		µg/L	1	8/23/2004
Chrysene	ND	75		µg/L	1	8/23/2004
Di-n-butyl phthalate	ND	50		µg/L	1	8/23/2004
Di-n-octyl phthalate	ND	75		µg/L	1	8/23/2004
Dibenz(a,h)anthracene	ND	50		µg/L	1	8/23/2004
Dibenzofuran	ND	50		µg/L	1	8/23/2004
1,2-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,3-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,4-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
3,3'-Dichlorobenzidine	ND	75		µg/L	1	8/23/2004
Diethyl phthalate	ND	50		µg/L	1	8/23/2004
Dimethyl phthalate	ND	50		µg/L	1	8/23/2004
2,4-Dichlorophenol	ND	50		µg/L	1	8/23/2004
2,4-Dimethylphenol	ND	50		µg/L	1	8/23/2004
4,6-Dinitro-2-methylphenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrophenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
2,6-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
Fluoranthene	ND	50		µg/L	1	8/23/2004
Fluorene	ND	50		µg/L	1	8/23/2004
Hexachlorobenzene	ND	50		µg/L	1	8/23/2004
Hexachlorobutadiene	ND	50		µg/L	1	8/23/2004
Hexachlorocyclopentadiene	ND	50		µg/L	1	8/23/2004
Hexachloroethane	ND	50		µg/L	1	8/23/2004
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	8/23/2004
Isophorone	ND	50		µg/L	1	8/23/2004
2-Methylnaphthalene	ND	50		µg/L	1	8/23/2004
2-Methylphenol	ND	75		µg/L	1	8/23/2004
3+4-Methylphenol	ND	50		µg/L	1	8/23/2004
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodimethylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodiphenylamine	ND	50		µg/L	1	8/23/2004
Naphthalene	ND	50		µg/L	1	8/23/2004
2-Nitroaniline	ND	250		µg/L	1	8/23/2004
3-Nitroaniline	ND	250		µg/L	1	8/23/2004
4-Nitroaniline	ND	100		µg/L	1	8/23/2004
Nitrobenzene	ND	50		µg/L	1	8/23/2004
2-Nitrophenol	ND	75		µg/L	1	8/23/2004
4-Nitrophenol	ND	250		µg/L	1	8/23/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408039
Project: Boundry Well Initial Sampling
Lab ID: 0408039-04

Client Sample ID: BW-2-A
Collection Date: 8/4/2004 11:30:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Pentachlorophenol	ND	250		µg/L	1	8/23/2004
Phenanthrene	ND	50		µg/L	1	8/23/2004
Phenol	ND	50		µg/L	1	8/23/2004
Pyrene	ND	75		µg/L	1	8/23/2004
Pyridine	ND	150		µg/L	1	8/23/2004
1,2,4-Trichlorobenzene	ND	50		µg/L	1	8/23/2004
2,4,5-Trichlorophenol	ND	50		µg/L	1	8/23/2004
2,4,6-Trichlorophenol	ND	75		µg/L	1	8/23/2004
Surr: 2,4,6-Tribromophenol	60.5	16.6-115		%REC	1	8/23/2004
Surr: 2-Fluorobiphenyl	56.9	37-95.7		%REC	1	8/23/2004
Surr: 2-Fluorophenol	51.3	9.54-89.8		%REC	1	8/23/2004
Surr: 4-Terphenyl-d14	81.7	47.9-115		%REC	1	8/23/2004
Surr: Nitrobenzene-d5	53.6	38-106		%REC	1	8/23/2004
Surr: Phenol-d6	40.3	10.7-63.4		%REC	1	8/23/2004

EPA METHOD 8310: PAHS

Analyst: IC

Naphthalene	ND	2.5		µg/L	1	8/21/2004 3:47:58 PM
1-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 3:47:58 PM
2-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 3:47:58 PM
Acenaphthylene	ND	2.5		µg/L	1	8/21/2004 3:47:58 PM
Acenaphthene	ND	2.5		µg/L	1	8/21/2004 3:47:58 PM
Fluorene	ND	0.80		µg/L	1	8/21/2004 3:47:58 PM
Phenanthrene	ND	0.60		µg/L	1	8/21/2004 3:47:58 PM
Anthracene	ND	0.60		µg/L	1	8/21/2004 3:47:58 PM
Fluoranthene	ND	0.30		µg/L	1	8/21/2004 3:47:58 PM
Pyrene	ND	0.30		µg/L	1	8/21/2004 3:47:58 PM
Benz(a)anthracene	ND	0.020		µg/L	1	8/21/2004 3:47:58 PM
Chrysene	ND	0.20		µg/L	1	8/21/2004 3:47:58 PM
Benzo(b)fluoranthene	ND	0.050		µg/L	1	8/21/2004 3:47:58 PM
Benzo(k)fluoranthene	ND	0.020		µg/L	1	8/21/2004 3:47:58 PM
Benzo(a)pyrene	ND	0.020		µg/L	1	8/21/2004 3:47:58 PM
Dibenz(a,h)anthracene	ND	0.040		µg/L	1	8/21/2004 3:47:58 PM
Benzo(g,h,i)perylene	ND	0.030		µg/L	1	8/21/2004 3:47:58 PM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	8/21/2004 3:47:58 PM
Surr: Benzo(e)pyrene	89.0	54-102		%REC	1	8/21/2004 3:47:58 PM

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: CMC

Specific Conductance	1300	0.010		µmhos/cm	1	8/11/2004
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EPA METHOD 7470: MERCURY

Analyst: CMC

Mercury	ND	0.00020		mg/L	1	8/9/2004
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EPA METHOD 6010C: DISSOLVED METALS

Analyst: NMO

Arsenic	ND	0.020		mg/L	1	8/6/2004 9:51:47 AM
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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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-A

Lab Order: 0408039

Collection Date: 8/4/2004 11:30:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-04

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Barium	0.12	0.0020		mg/L	1	8/6/2004 9:51:47 AM
Cadmium	ND	0.0020		mg/L	1	8/6/2004 9:51:47 AM
Calcium	6.7	1.0		mg/L	1	8/6/2004 9:51:47 AM
Chromium	ND	0.0060		mg/L	1	8/6/2004 9:51:47 AM
Lead	0.0059	0.0050		mg/L	1	8/6/2004 9:51:47 AM
Magnesium	2.5	1.0		mg/L	1	8/6/2004 9:51:47 AM
Potassium	ND	1.0		mg/L	1	8/6/2004 9:51:47 AM
Selenium	ND	0.050		mg/L	1	8/6/2004 9:51:47 AM
Silver	ND	0.0050		mg/L	1	8/6/2004 9:51:47 AM
Sodium	220	10		mg/L	10	8/6/2004 10:49:52 AM
Uranium	ND	0.10		mg/L	1	8/6/2004 9:51:47 AM

EPA METHOD 160.1: TDS

Analyst: JEB

Total Dissolved Solids	1100	50	mg/L	1	8/10/2004
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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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-B

Lab Order: 0408039

Collection Date: 8/4/2004 12:30:00 PM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-05

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	1.7	0.10		mg/L	1	8/5/2004 3:20:40 PM
Chloride	32	0.10		mg/L	1	8/5/2004 3:20:40 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/5/2004 3:20:40 PM
Bromide	1.3	0.10		mg/L	1	8/5/2004 3:20:40 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/5/2004 3:20:40 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/5/2004 3:20:40 PM
Sulfate	140	2.5		mg/L	5	8/6/2004 6:18:13 PM
EPA METHOD 310.1: ALKALINITY						Analyst: MAP
Alkalinity, Total (As CaCO ₃)	1200	4.0		mg/L CaCO ₃	2	8/16/2004
Carbonate	ND	4.0		mg/L CaCO ₃	2	8/16/2004
Bicarbonate	1200	4.0		mg/L CaCO ₃	2	8/16/2004
EPA METHOD 504.1: EDB						Analyst: SCC
1,2-Dibromoethane	ND	0.010		µg/L	1	8/6/2004 2:15:12 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/15/2004 12:23:14 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2004 12:23:14 AM
Surr: DNOP	89.3	58-140		%REC	1	8/15/2004 12:23:14 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: BDH
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/12/2004 1:36:31 PM
Surr: BFB	95.6	74-118		%REC	1	8/12/2004 1:36:31 PM
EPA METHOD 8082: PCB'S						Analyst: JMP
Aroclor 1016	ND	1.0		µg/L	1	8/24/2004 9:12:52 AM
Aroclor 1221	ND	5.0		µg/L	1	8/24/2004 9:12:52 AM
Aroclor 1232	ND	1.0		µg/L	1	8/24/2004 9:12:52 AM
Aroclor 1242	ND	1.0		µg/L	1	8/24/2004 9:12:52 AM
Aroclor 1248	ND	1.0		µg/L	1	8/24/2004 9:12:52 AM
Aroclor 1254	ND	1.0		µg/L	1	8/24/2004 9:12:52 AM
Aroclor 1260	ND	1.0		µg/L	1	8/24/2004 9:12:52 AM
Surr: Decachlorobiphenyl	108	45.3-140		%REC	1	8/24/2004 9:12:52 AM
Surr: Tetrachloro-m-xylene	86.8	28.1-139		%REC	1	8/24/2004 9:12:52 AM
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	1.0		µg/L	1	8/10/2004
Toluene	ND	1.0		µg/L	1	8/10/2004
Ethylbenzene	ND	1.0		µg/L	1	8/10/2004
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/10/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-B

Lab Order: 0408039

Collection Date: 8/4/2004 12:30:00 PM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-05

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/10/2004
Naphthalene	ND	2.0		µg/L	1	8/10/2004
1-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
2-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
Acetone	ND	10		µg/L	1	8/10/2004
Bromobenzene	ND	1.0		µg/L	1	8/10/2004
Bromochloromethane	ND	1.0		µg/L	1	8/10/2004
Bromodichloromethane	ND	1.0		µg/L	1	8/10/2004
Bromoform	ND	1.0		µg/L	1	8/10/2004
Bromomethane	ND	2.0		µg/L	1	8/10/2004
2-Butanone	ND	10		µg/L	1	8/10/2004
Carbon disulfide	ND	10		µg/L	1	8/10/2004
Carbon Tetrachloride	ND	1.0		µg/L	1	8/10/2004
Chlorobenzene	ND	1.0		µg/L	1	8/10/2004
Chloroethane	ND	2.0		µg/L	1	8/10/2004
Chloroform	ND	1.0		µg/L	1	8/10/2004
Chloromethane	ND	1.0		µg/L	1	8/10/2004
2-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
4-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
cis-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/10/2004
Dibromochloromethane	ND	1.0		µg/L	1	8/10/2004
Dibromomethane	ND	2.0		µg/L	1	8/10/2004
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,3-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
2,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
Hexachlorobutadiene	ND	1.0		µg/L	1	8/10/2004
2-Hexanone	ND	10		µg/L	1	8/10/2004
Isopropylbenzene	ND	1.0		µg/L	1	8/10/2004
4-Isopropyltoluene	ND	1.0		µg/L	1	8/10/2004
4-Methyl-2-pentanone	ND	10		µg/L	1	8/10/2004
Methylene Chloride	ND	3.0		µg/L	1	8/10/2004
n-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
n-Propylbenzene	ND	1.0		µg/L	1	8/10/2004

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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-B

Lab Order: 0408039

Collection Date: 8/4/2004 12:30:00 PM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-05

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
sec-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
Styrene	ND	1.0		µg/L	1	8/10/2004
tert-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/10/2004
trans-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/10/2004
Trichlorofluoromethane	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/10/2004
Vinyl chloride	ND	1.0		µg/L	1	8/10/2004
Xylenes, Total	ND	1.0		µg/L	1	8/10/2004
Surr: 1,2-Dichloroethane-d4	100	70.6-124		%REC	1	8/10/2004
Surr: 4-Bromofluorobenzene	94.9	76.4-130		%REC	1	8/10/2004
Surr: Dibromofluoromethane	106	67.2-131		%REC	1	8/10/2004
Surr: Toluene-d8	95.7	82.1-123		%REC	1	8/10/2004

EPA METHOD 8270D: SEMIVOLATILES

Analyst: GAB

Acenaphthene	ND	50		µg/L	1	8/23/2004
Acenaphthylene	ND	50		µg/L	1	8/23/2004
Aniline	ND	50		µg/L	1	8/23/2004
Anthracene	ND	50		µg/L	1	8/23/2004
Azobenzene	ND	50		µg/L	1	8/23/2004
Benz(a)anthracene	ND	75		µg/L	1	8/23/2004
Benzo(a)pyrene	ND	50		µg/L	1	8/23/2004
Benzo(b)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzo(g,h,i)perylene	ND	50		µg/L	1	8/23/2004
Benzo(k)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzoic acid	ND	250		µg/L	1	8/23/2004
Benzyl alcohol	ND	100		µg/L	1	8/23/2004
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	8/23/2004
Bis(2-chloroethyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-chloroisopropyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-ethylhexyl)phthalate	ND	75		µg/L	1	8/23/2004
4-Bromophenyl phenyl ether	ND	50		µg/L	1	8/23/2004
Butyl benzyl phthalate	ND	75		µg/L	1	8/23/2004
Carbazole	ND	50		µg/L	1	8/23/2004
4-Chloro-3-methylphenol	ND	100		µg/L	1	8/23/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-B

Lab Order: 0408039

Collection Date: 8/4/2004 12:30:00 PM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-05

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
4-Chloroaniline	ND	100		µg/L	1	8/23/2004
2-Chloronaphthalene	ND	50		µg/L	1	8/23/2004
2-Chlorophenol	ND	50		µg/L	1	8/23/2004
4-Chlorophenyl phenyl ether	ND	75		µg/L	1	8/23/2004
Chrysene	ND	75		µg/L	1	8/23/2004
Di-n-butyl phthalate	ND	50		µg/L	1	8/23/2004
Di-n-octyl phthalate	ND	75		µg/L	1	8/23/2004
Dibenz(a,h)anthracene	ND	50		µg/L	1	8/23/2004
Dibenzofuran	ND	50		µg/L	1	8/23/2004
1,2-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,3-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,4-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
3,3'-Dichlorobenzidine	ND	75		µg/L	1	8/23/2004
Diethyl phthalate	ND	50		µg/L	1	8/23/2004
Dimethyl phthalate	ND	50		µg/L	1	8/23/2004
2,4-Dichlorophenol	ND	50		µg/L	1	8/23/2004
2,4-Dimethylphenol	ND	50		µg/L	1	8/23/2004
4,6-Dinitro-2-methylphenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrophenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
2,6-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
Fluoranthene	ND	50		µg/L	1	8/23/2004
Fluorene	ND	50		µg/L	1	8/23/2004
Hexachlorobenzene	ND	50		µg/L	1	8/23/2004
Hexachlorobutadiene	ND	50		µg/L	1	8/23/2004
Hexachlorocyclopentadiene	ND	50		µg/L	1	8/23/2004
Hexachloroethane	ND	50		µg/L	1	8/23/2004
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	8/23/2004
Isophorone	ND	50		µg/L	1	8/23/2004
2-Methylnaphthalene	ND	50		µg/L	1	8/23/2004
2-Methylphenol	ND	75		µg/L	1	8/23/2004
3+4-Methylphenol	ND	50		µg/L	1	8/23/2004
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodimethylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodiphenylamine	ND	50		µg/L	1	8/23/2004
Naphthalene	ND	50		µg/L	1	8/23/2004
2-Nitroaniline	ND	250		µg/L	1	8/23/2004
3-Nitroaniline	ND	250		µg/L	1	8/23/2004
4-Nitroaniline	ND	100		µg/L	1	8/23/2004
Nitrobenzene	ND	50		µg/L	1	8/23/2004
2-Nitrophenol	ND	75		µg/L	1	8/23/2004
4-Nitrophenol	ND	250		µg/L	1	8/23/2004

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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-B

Lab Order: 0408039

Collection Date: 8/4/2004 12:30:00 PM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-05

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Pentachlorophenol	ND	250		µg/L	1	8/23/2004
Phenanthrene	ND	50		µg/L	1	8/23/2004
Phenol	ND	50		µg/L	1	8/23/2004
Pyrene	ND	75		µg/L	1	8/23/2004
Pyridine	ND	150		µg/L	1	8/23/2004
1,2,4-Trichlorobenzene	ND	50		µg/L	1	8/23/2004
2,4,5-Trichlorophenol	ND	50		µg/L	1	8/23/2004
2,4,6-Trichlorophenol	ND	75		µg/L	1	8/23/2004
Surr: 2,4,6-Tribromophenol	53.1	16.6-115		%REC	1	8/23/2004
Surr: 2-Fluorobiphenyl	52.4	37-95.7		%REC	1	8/23/2004
Surr: 2-Fluorophenol	46.8	9.54-89.8		%REC	1	8/23/2004
Surr: 4-Terphenyl-d14	85.3	47.9-115		%REC	1	8/23/2004
Surr: Nitrobenzene-d5	52.5	38-106		%REC	1	8/23/2004
Surr: Phenol-d6	36.5	10.7-63.4		%REC	1	8/23/2004

EPA METHOD 8310: PAHS

Analyst: IC

Naphthalene	ND	2.5		µg/L	1	8/21/2004 4:36:01 PM
1-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 4:36:01 PM
2-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 4:36:01 PM
Acenaphthylene	ND	2.5		µg/L	1	8/21/2004 4:36:01 PM
Acenaphthene	ND	2.5		µg/L	1	8/21/2004 4:36:01 PM
Fluorene	ND	0.80		µg/L	1	8/21/2004 4:36:01 PM
Phenanthrene	ND	0.60		µg/L	1	8/21/2004 4:36:01 PM
Anthracene	ND	0.60		µg/L	1	8/21/2004 4:36:01 PM
Fluoranthene	ND	0.30		µg/L	1	8/21/2004 4:36:01 PM
Pyrene	ND	0.30		µg/L	1	8/21/2004 4:36:01 PM
Benz(a)anthracene	ND	0.020		µg/L	1	8/21/2004 4:36:01 PM
Chrysene	ND	0.20		µg/L	1	8/21/2004 4:36:01 PM
Benzo(b)fluoranthene	ND	0.050		µg/L	1	8/21/2004 4:36:01 PM
Benzo(k)fluoranthene	ND	0.020		µg/L	1	8/21/2004 4:36:01 PM
Benzo(a)pyrene	ND	0.020		µg/L	1	8/21/2004 4:36:01 PM
Dibenz(a,h)anthracene	ND	0.040		µg/L	1	8/21/2004 4:36:01 PM
Benzo(g,h,i)perylene	ND	0.030		µg/L	1	8/21/2004 4:36:01 PM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	8/21/2004 4:36:01 PM
Surr: Benzo(e)pyrene	90.5	54-102		%REC	1	8/21/2004 4:36:01 PM

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: CMC

Specific Conductance	2200	0.010		µmhos/cm	1	8/11/2004
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EPA METHOD 7470: MERCURY

Analyst: CMC

Mercury	ND	0.00020		mg/L	1	8/9/2004
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EPA METHOD 6010C: DISSOLVED METALS

Analyst: NMO

Arsenic	ND	0.020		mg/L	1	8/6/2004 10:06:59 AM
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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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408039
Project: Boundry Well Initial Sampling
Lab ID: 0408039-05

Client Sample ID: BW-2-B
Collection Date: 8/4/2004 12:30:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Barium	0.066	0.0020		mg/L	1	8/6/2004 10:06:59 AM
Cadmium	ND	0.0020		mg/L	1	8/6/2004 10:06:59 AM
Calcium	14	1.0		mg/L	1	8/6/2004 10:06:59 AM
Chromium	ND	0.0060		mg/L	1	8/6/2004 10:06:59 AM
Lead	0.0064	0.0050		mg/L	1	8/6/2004 10:06:59 AM
Magnesium	3.2	1.0		mg/L	1	8/6/2004 10:06:59 AM
Potassium	4.7	1.0		mg/L	1	8/6/2004 10:06:59 AM
Selenium	0.069	0.050		mg/L	1	8/6/2004 10:06:59 AM
Silver	ND	0.0050		mg/L	1	8/6/2004 10:06:59 AM
Sodium	540	10		mg/L	10	8/6/2004 10:52:47 AM
Uranium	ND	0.10		mg/L	1	8/6/2004 10:06:59 AM
EPA METHOD 160.1: TDS						Analyst: JEB
Total Dissolved Solids	1500	50		mg/L	1	8/10/2004

NMAC - Se = 0.05 mg/L

MCL - Se = 0.05 mg/L

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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408039
Project: Boundry Well Initial Sampling
Lab ID: 0408039-02

Client Sample ID: BW-3-B
Collection Date: 8/4/2004 9:30:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS Analyst: MAP						
Fluoride	1.4	0.10		mg/L	1	8/5/2004 2:30:17 PM
Chloride	35	0.10		mg/L	1	8/5/2004 2:30:17 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/5/2004 2:30:17 PM
Bromide	0.49	0.10		mg/L	1	8/5/2004 2:30:17 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/5/2004 2:30:17 PM
Phosphorus, Orthophosphate (As P)	1.2	0.50		mg/L	1	8/5/2004 2:30:17 PM
Sulfate	63	0.50		mg/L	1	8/5/2004 2:30:17 PM
EPA METHOD 310.1: ALKALINITY Analyst: MAP						
Alkalinity, Total (As CaCO ₃)	820	4.0		mg/L CaCO ₃	2	8/16/2004
Carbonate	24	4.0		mg/L CaCO ₃	2	8/16/2004
Bicarbonate	790	4.0		mg/L CaCO ₃	2	8/16/2004
EPA METHOD 504.1: EDB Analyst: SCC						
1,2-Dibromoethane	ND	0.010		µg/L	1	8/6/2004 1:08:49 PM
EPA METHOD 8015B: DIESEL RANGE Analyst: JMP						
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/14/2004 10:51:09 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/14/2004 10:51:09 PM
Surr: DNOP	112	58-140		%REC	1	8/14/2004 10:51:09 PM
EPA METHOD 8015B: GASOLINE RANGE Analyst: BDH						
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/12/2004 12:04:59 PM
Surr: BFB	91.7	74-118		%REC	1	8/12/2004 12:04:59 PM
EPA METHOD 8082: PCB'S Analyst: JMP						
Aroclor 1016	ND	1.0		µg/L	1	8/24/2004 6:54:20 AM
Aroclor 1221	ND	5.0		µg/L	1	8/24/2004 6:54:20 AM
Aroclor 1232	ND	1.0		µg/L	1	8/24/2004 6:54:20 AM
Aroclor 1242	ND	1.0		µg/L	1	8/24/2004 6:54:20 AM
Aroclor 1248	ND	1.0		µg/L	1	8/24/2004 6:54:20 AM
Aroclor 1254	ND	1.0		µg/L	1	8/24/2004 6:54:20 AM
Aroclor 1260	ND	1.0		µg/L	1	8/24/2004 6:54:20 AM
Surr: Decachlorobiphenyl	102	45.3-140		%REC	1	8/24/2004 6:54:20 AM
Surr: Tetrachloro-m-xylene	72.8	28.1-139		%REC	1	8/24/2004 6:54:20 AM
EPA METHOD 8260B: VOLATILES Analyst: KTM						
Benzene	ND	1.0		µg/L	1	8/10/2004
Toluene	ND	1.0		µg/L	1	8/10/2004
Ethylbenzene	ND	1.0		µg/L	1	8/10/2004
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/10/2004

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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-3-B

Lab Order: 0408039

Collection Date: 8/4/2004 9:30:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-02

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/10/2004
Naphthalene	ND	2.0		µg/L	1	8/10/2004
1-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
2-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
Acetone	ND	10		µg/L	1	8/10/2004
Bromobenzene	ND	1.0		µg/L	1	8/10/2004
Bromochloromethane	ND	1.0		µg/L	1	8/10/2004
Bromodichloromethane	ND	1.0		µg/L	1	8/10/2004
Bromoform	ND	1.0		µg/L	1	8/10/2004
Bromomethane	ND	2.0		µg/L	1	8/10/2004
2-Butanone	ND	10		µg/L	1	8/10/2004
Carbon disulfide	ND	10		µg/L	1	8/10/2004
Carbon Tetrachloride	ND	1.0		µg/L	1	8/10/2004
Chlorobenzene	ND	1.0		µg/L	1	8/10/2004
Chloroethane	ND	2.0		µg/L	1	8/10/2004
Chloroform	ND	1.0		µg/L	1	8/10/2004
Chloromethane	ND	1.0		µg/L	1	8/10/2004
2-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
4-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
cis-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/10/2004
Dibromochloromethane	ND	1.0		µg/L	1	8/10/2004
Dibromomethane	ND	2.0		µg/L	1	8/10/2004
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,3-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
2,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
Hexachlorobutadiene	ND	1.0		µg/L	1	8/10/2004
2-Hexanone	ND	10		µg/L	1	8/10/2004
Isopropylbenzene	ND	1.0		µg/L	1	8/10/2004
4-Isopropyltoluene	ND	1.0		µg/L	1	8/10/2004
4-Methyl-2-pentanone	ND	10		µg/L	1	8/10/2004
Methylene Chloride	ND	3.0		µg/L	1	8/10/2004
n-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
n-Propylbenzene	ND	1.0		µg/L	1	8/10/2004

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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-3-B

Lab Order: 0408039

Collection Date: 8/4/2004 9:30:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-02

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
sec-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
Styrene	ND	1.0		µg/L	1	8/10/2004
tert-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/10/2004
trans-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/10/2004
Trichlorofluoromethane	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/10/2004
Vinyl chloride	ND	1.0		µg/L	1	8/10/2004
Xylenes, Total	ND	1.0		µg/L	1	8/10/2004
Surr: 1,2-Dichloroethane-d4	96.4	70.6-124		%REC	1	8/10/2004
Surr: 4-Bromofluorobenzene	93.8	76.4-130		%REC	1	8/10/2004
Surr: Dibromofluoromethane	106	67.2-131		%REC	1	8/10/2004
Surr: Toluene-d8	100	82.1-123		%REC	1	8/10/2004

EPA METHOD 8270D: SEMIVOLATILES

Analyst: GAB

Acenaphthene	ND	50		µg/L	1	8/23/2004
Acenaphthylene	ND	50		µg/L	1	8/23/2004
Aniline	ND	50		µg/L	1	8/23/2004
Anthracene	ND	50		µg/L	1	8/23/2004
Azobenzene	ND	50		µg/L	1	8/23/2004
Benz(a)anthracene	ND	75		µg/L	1	8/23/2004
Benzo(a)pyrene	ND	50		µg/L	1	8/23/2004
Benzo(b)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzo(g,h,i)perylene	ND	50		µg/L	1	8/23/2004
Benzo(k)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzoic acid	ND	250		µg/L	1	8/23/2004
Benzyl alcohol	ND	100		µg/L	1	8/23/2004
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	8/23/2004
Bis(2-chloroethyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-chloroisopropyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-ethylhexyl)phthalate	ND	75		µg/L	1	8/23/2004
4-Bromophenyl phenyl ether	ND	50		µg/L	1	8/23/2004
Butyl benzyl phthalate	ND	75		µg/L	1	8/23/2004
Carbazole	ND	50		µg/L	1	8/23/2004
4-Chloro-3-methylphenol	ND	100		µg/L	1	8/23/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-3-B

Lab Order: 0408039

Collection Date: 8/4/2004 9:30:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-02

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
4-Chloroaniline	ND	100		µg/L	1	8/23/2004
2-Chloronaphthalene	ND	50		µg/L	1	8/23/2004
2-Chlorophenol	ND	50		µg/L	1	8/23/2004
4-Chlorophenyl phenyl ether	ND	75		µg/L	1	8/23/2004
Chrysene	ND	75		µg/L	1	8/23/2004
Di-n-butyl phthalate	ND	50		µg/L	1	8/23/2004
Di-n-octyl phthalate	ND	75		µg/L	1	8/23/2004
Dibenz(a,h)anthracene	ND	50		µg/L	1	8/23/2004
Dibenzofuran	ND	50		µg/L	1	8/23/2004
1,2-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,3-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,4-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
3,3'-Dichlorobenzidine	ND	75		µg/L	1	8/23/2004
Diethyl phthalate	ND	50		µg/L	1	8/23/2004
Dimethyl phthalate	ND	50		µg/L	1	8/23/2004
2,4-Dichlorophenol	ND	50		µg/L	1	8/23/2004
2,4-Dimethylphenol	ND	50		µg/L	1	8/23/2004
4,6-Dinitro-2-methylphenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrophenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
2,6-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
Fluoranthene	ND	50		µg/L	1	8/23/2004
Fluorene	ND	50		µg/L	1	8/23/2004
Hexachlorobenzene	ND	50		µg/L	1	8/23/2004
Hexachlorobutadiene	ND	50		µg/L	1	8/23/2004
Hexachlorocyclopentadiene	ND	50		µg/L	1	8/23/2004
Hexachloroethane	ND	50		µg/L	1	8/23/2004
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	8/23/2004
Isophorone	ND	50		µg/L	1	8/23/2004
2-Methylnaphthalene	ND	50		µg/L	1	8/23/2004
2-Methylphenol	ND	75		µg/L	1	8/23/2004
3+4-Methylphenol	ND	50		µg/L	1	8/23/2004
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodimethylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodiphenylamine	ND	50		µg/L	1	8/23/2004
Naphthalene	ND	50		µg/L	1	8/23/2004
2-Nitroaniline	ND	250		µg/L	1	8/23/2004
3-Nitroaniline	ND	250		µg/L	1	8/23/2004
4-Nitroaniline	ND	100		µg/L	1	8/23/2004
Nitrobenzene	ND	50		µg/L	1	8/23/2004
2-Nitrophenol	ND	75		µg/L	1	8/23/2004
4-Nitrophenol	ND	250		µg/L	1	8/23/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408039
Project: Boundry Well Initial Sampling
Lab ID: 0408039-02

Client Sample ID: BW-3-B
Collection Date: 8/4/2004 9:30:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Pentachlorophenol	ND	250		µg/L	1	8/23/2004
Phenanthrene	ND	50		µg/L	1	8/23/2004
Phenol	ND	50		µg/L	1	8/23/2004
Pyrene	ND	75		µg/L	1	8/23/2004
Pyridine	ND	150		µg/L	1	8/23/2004
1,2,4-Trichlorobenzene	ND	50		µg/L	1	8/23/2004
2,4,5-Trichlorophenol	ND	50		µg/L	1	8/23/2004
2,4,6-Trichlorophenol	ND	75		µg/L	1	8/23/2004
Surr: 2,4,6-Tribromophenol	59.8	16.6-115		%REC	1	8/23/2004
Surr: 2-Fluorobiphenyl	59.0	37-95.7		%REC	1	8/23/2004
Surr: 2-Fluorophenol	52.4	9.54-89.8		%REC	1	8/23/2004
Surr: 4-Terphenyl-d14	84.1	47.9-115		%REC	1	8/23/2004
Surr: Nitrobenzene-d5	56.9	38-106		%REC	1	8/23/2004
Surr: Phenol-d6	40.2	10.7-63.4		%REC	1	8/23/2004

EPA METHOD 8310: PAHS

Analyst: IC

Naphthalene	ND	2.5		µg/L	1	8/21/2004 2:11:59 PM
1-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 2:11:59 PM
2-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 2:11:59 PM
Acenaphthylene	ND	2.5		µg/L	1	8/21/2004 2:11:59 PM
Acenaphthene	ND	2.5		µg/L	1	8/21/2004 2:11:59 PM
Fluorene	ND	0.80		µg/L	1	8/21/2004 2:11:59 PM
Phenanthrene	ND	0.60		µg/L	1	8/21/2004 2:11:59 PM
Anthracene	ND	0.60		µg/L	1	8/21/2004 2:11:59 PM
Fluoranthene	ND	0.30		µg/L	1	8/21/2004 2:11:59 PM
Pyrene	ND	0.30		µg/L	1	8/21/2004 2:11:59 PM
Benz(a)anthracene	ND	0.020		µg/L	1	8/21/2004 2:11:59 PM
Chrysene	ND	0.20		µg/L	1	8/21/2004 2:11:59 PM
Benzo(b)fluoranthene	ND	0.050		µg/L	1	8/21/2004 2:11:59 PM
Benzo(k)fluoranthene	ND	0.020		µg/L	1	8/21/2004 2:11:59 PM
Benzo(a)pyrene	ND	0.020		µg/L	1	8/21/2004 2:11:59 PM
Dibenz(a,h)anthracene	ND	0.040		µg/L	1	8/21/2004 2:11:59 PM
Benzo(g,h,i)perylene	ND	0.030		µg/L	1	8/21/2004 2:11:59 PM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	8/21/2004 2:11:59 PM
Surr: Benzo(e)pyrene	95.0	54-102		%REC	1	8/21/2004 2:11:59 PM

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: CMC

Specific Conductance	1400	0.010		µmhos/cm	1	8/11/2004
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EPA METHOD 7470: MERCURY

Analyst: CMC

Mercury	ND	0.00020		mg/L	1	8/9/2004
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EPA METHOD 6010C: DISSOLVED METALS

Analyst: NMO

Arsenic	ND	0.020		mg/L	1	8/6/2004 9:43:12 AM
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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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-3-B

Lab Order: 0408039

Collection Date: 8/4/2004 9:30:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-02

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Barium	0.13	0.0020		mg/L	1	8/6/2004 9:43:12 AM
Cadmium	ND	0.0020		mg/L	1	8/6/2004 9:43:12 AM
Calcium	11	1.0		mg/L	1	8/6/2004 9:43:12 AM
Chromium	ND	0.0060		mg/L	1	8/6/2004 9:43:12 AM
Lead	0.0060	0.0050		mg/L	1	8/6/2004 9:43:12 AM
Magnesium	3.1	1.0		mg/L	1	8/6/2004 9:43:12 AM
Potassium	1.3	1.0		mg/L	1	8/6/2004 9:43:12 AM
Selenium	ND	0.050		mg/L	1	8/6/2004 9:43:12 AM
Silver	ND	0.0050		mg/L	1	8/6/2004 9:43:12 AM
Sodium	340	10		mg/L	10	8/6/2004 10:35:22 AM
Uranium	ND	0.10		mg/L	1	8/6/2004 9:43:12 AM

EPA METHOD 160.1: TDS

Analyst: JEB

Total Dissolved Solids	1000	50	mg/L	1	8/10/2004
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Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-1-C

Lab Order: 0408039

Collection Date: 8/4/2004 1:30:00 PM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-06

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	2.0	0.10		mg/L	1	8/5/2004 3:37:29 PM
Chloride	38	0.10		mg/L	1	8/5/2004 3:37:29 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/5/2004 3:37:29 PM
Bromide	0.32	0.10		mg/L	1	8/5/2004 3:37:29 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/5/2004 3:37:29 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/5/2004 3:37:29 PM
Sulfate	210	5.0		mg/L	10	8/6/2004 6:35:01 PM
EPA METHOD 310.1: ALKALINITY						Analyst: MAP
Alkalinity, Total (As CaCO3)	400	4.0		mg/L CaCO3	2	8/16/2004
Carbonate	44	4.0		mg/L CaCO3	2	8/16/2004
Bicarbonate	350	4.0		mg/L CaCO3	2	8/16/2004
EPA METHOD 504.1: EDB						Analyst: SCC
1,2-Dibromoethane	ND	0.010		µg/L	1	8/6/2004 2:28:41 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/15/2004 12:53:42 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2004 12:53:42 AM
Surr: DNOP	118	58-140		%REC	1	8/15/2004 12:53:42 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: BDH
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/12/2004 2:07:06 PM
Surr: BFB	95.4	74-118		%REC	1	8/12/2004 2:07:06 PM
EPA METHOD 8082: PCB'S						Analyst: JMP
Aroclor 1016	ND	1.0		µg/L	1	8/24/2004 12:45:42 AM
Aroclor 1221	ND	5.0		µg/L	1	8/24/2004 12:45:42 AM
Aroclor 1232	ND	1.0		µg/L	1	8/24/2004 12:45:42 AM
Aroclor 1242	ND	1.0		µg/L	1	8/24/2004 12:45:42 AM
Aroclor 1248	ND	1.0		µg/L	1	8/24/2004 12:45:42 AM
Aroclor 1254	ND	1.0		µg/L	1	8/24/2004 12:45:42 AM
Aroclor 1260	ND	1.0		µg/L	1	8/24/2004 12:45:42 AM
Surr: Decachlorobiphenyl	108	45.3-140		%REC	1	8/24/2004 12:45:42 AM
Surr: Tetrachloro-m-xylene	72.0	28.1-139		%REC	1	8/24/2004 12:45:42 AM
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	1.0		µg/L	1	8/10/2004
Toluene	ND	1.0		µg/L	1	8/10/2004
Ethylbenzene	ND	1.0		µg/L	1	8/10/2004
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/10/2004

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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-1-C

Lab Order: 0408039

Collection Date: 8/4/2004 1:30:00 PM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-06

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/10/2004
Naphthalene	ND	2.0		µg/L	1	8/10/2004
1-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
2-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
Acetone	ND	10		µg/L	1	8/10/2004
Bromobenzene	ND	1.0		µg/L	1	8/10/2004
Bromochloromethane	ND	1.0		µg/L	1	8/10/2004
Bromodichloromethane	ND	1.0		µg/L	1	8/10/2004
Bromoform	ND	1.0		µg/L	1	8/10/2004
Bromomethane	ND	2.0		µg/L	1	8/10/2004
2-Butanone	ND	10		µg/L	1	8/10/2004
Carbon disulfide	ND	10		µg/L	1	8/10/2004
Carbon Tetrachloride	ND	1.0		µg/L	1	8/10/2004
Chlorobenzene	ND	1.0		µg/L	1	8/10/2004
Chloroethane	ND	2.0		µg/L	1	8/10/2004
Chloroform	ND	1.0		µg/L	1	8/10/2004
Chloromethane	ND	1.0		µg/L	1	8/10/2004
2-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
4-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
cis-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/10/2004
Dibromochloromethane	ND	1.0		µg/L	1	8/10/2004
Dibromomethane	ND	2.0		µg/L	1	8/10/2004
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,3-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
2,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
Hexachlorobutadiene	ND	1.0		µg/L	1	8/10/2004
2-Hexanone	ND	10		µg/L	1	8/10/2004
Isopropylbenzene	ND	1.0		µg/L	1	8/10/2004
4-Isopropyltoluene	ND	1.0		µg/L	1	8/10/2004
4-Methyl-2-pentanone	ND	10		µg/L	1	8/10/2004
Methylene Chloride	ND	3.0		µg/L	1	8/10/2004
n-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
n-Propylbenzene	ND	1.0		µg/L	1	8/10/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-1-C

Lab Order: 0408039

Collection Date: 8/4/2004 1:30:00 PM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-06

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
sec-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
Styrene	ND	1.0		µg/L	1	8/10/2004
tert-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/10/2004
trans-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/10/2004
Trichlorofluoromethane	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/10/2004
Vinyl chloride	ND	1.0		µg/L	1	8/10/2004
Xylenes, Total	ND	1.0		µg/L	1	8/10/2004
Surr: 1,2-Dichloroethane-d4	96.9	70.6-124		%REC	1	8/10/2004
Surr: 4-Bromofluorobenzene	96.5	76.4-130		%REC	1	8/10/2004
Surr: Dibromofluoromethane	108	67.2-131		%REC	1	8/10/2004
Surr: Toluene-d8	100	82.1-123		%REC	1	8/10/2004

EPA METHOD 8270D: SEMIVOLATILES

Analyst: GAB

Acenaphthene	ND	50		µg/L	1	8/23/2004
Acenaphthylene	ND	50		µg/L	1	8/23/2004
Aniline	ND	50		µg/L	1	8/23/2004
Anthracene	ND	50		µg/L	1	8/23/2004
Azobenzene	ND	50		µg/L	1	8/23/2004
Benz(a)anthracene	ND	75		µg/L	1	8/23/2004
Benzo(a)pyrene	ND	50		µg/L	1	8/23/2004
Benzo(b)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzo(g,h,i)perylene	ND	50		µg/L	1	8/23/2004
Benzo(k)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzoic acid	ND	250		µg/L	1	8/23/2004
Benzyl alcohol	ND	100		µg/L	1	8/23/2004
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	8/23/2004
Bis(2-chloroethyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-chloroisopropyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-ethylhexyl)phthalate	ND	75		µg/L	1	8/23/2004
4-Bromophenyl phenyl ether	ND	50		µg/L	1	8/23/2004
Butyl benzyl phthalate	ND	75		µg/L	1	8/23/2004
Carbazole	ND	50		µg/L	1	8/23/2004
4-Chloro-3-methylphenol	ND	100		µg/L	1	8/23/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-1-C

Lab Order: 0408039

Collection Date: 8/4/2004 1:30:00 PM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-06

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
4-Chloroaniline	ND	100		µg/L	1	8/23/2004
2-Chloronaphthalene	ND	50		µg/L	1	8/23/2004
2-Chlorophenol	ND	50		µg/L	1	8/23/2004
4-Chlorophenyl phenyl ether	ND	75		µg/L	1	8/23/2004
Chrysene	ND	75		µg/L	1	8/23/2004
Di-n-butyl phthalate	ND	50		µg/L	1	8/23/2004
Di-n-octyl phthalate	ND	75		µg/L	1	8/23/2004
Dibenz(a,h)anthracene	ND	50		µg/L	1	8/23/2004
Dibenzofuran	ND	50		µg/L	1	8/23/2004
1,2-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,3-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,4-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
3,3'-Dichlorobenzidine	ND	75		µg/L	1	8/23/2004
Diethyl phthalate	ND	50		µg/L	1	8/23/2004
Dimethyl phthalate	ND	50		µg/L	1	8/23/2004
2,4-Dichlorophenol	ND	50		µg/L	1	8/23/2004
2,4-Dimethylphenol	ND	50		µg/L	1	8/23/2004
4,6-Dinitro-2-methylphenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrophenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
2,6-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
Fluoranthene	ND	50		µg/L	1	8/23/2004
Fluorene	ND	50		µg/L	1	8/23/2004
Hexachlorobenzene	ND	50		µg/L	1	8/23/2004
Hexachlorobutadiene	ND	50		µg/L	1	8/23/2004
Hexachlorocyclopentadiene	ND	50		µg/L	1	8/23/2004
Hexachloroethane	ND	50		µg/L	1	8/23/2004
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	8/23/2004
Isophorone	ND	50		µg/L	1	8/23/2004
2-Methylnaphthalene	ND	50		µg/L	1	8/23/2004
2-Methylphenol	ND	75		µg/L	1	8/23/2004
3+4-Methylphenol	ND	50		µg/L	1	8/23/2004
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodimethylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodiphenylamine	ND	50		µg/L	1	8/23/2004
Naphthalene	ND	50		µg/L	1	8/23/2004
2-Nitroaniline	ND	250		µg/L	1	8/23/2004
3-Nitroaniline	ND	250		µg/L	1	8/23/2004
4-Nitroaniline	ND	100		µg/L	1	8/23/2004
Nitrobenzene	ND	50		µg/L	1	8/23/2004
2-Nitrophenol	ND	75		µg/L	1	8/23/2004
4-Nitrophenol	ND	250		µg/L	1	8/23/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-1-C

Lab Order: 0408039

Collection Date: 8/4/2004 1:30:00 PM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-06

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Pentachlorophenol	ND	250		µg/L	1	8/23/2004
Phenanthrene	ND	50		µg/L	1	8/23/2004
Phenol	ND	50		µg/L	1	8/23/2004
Pyrene	ND	75		µg/L	1	8/23/2004
Pyridine	ND	150		µg/L	1	8/23/2004
1,2,4-Trichlorobenzene	ND	50		µg/L	1	8/23/2004
2,4,5-Trichlorophenol	ND	50		µg/L	1	8/23/2004
2,4,6-Trichlorophenol	ND	75		µg/L	1	8/23/2004
Surr: 2,4,6-Tribromophenol	49.7	16.6-115		%REC	1	8/23/2004
Surr: 2-Fluorobiphenyl	40.0	37-95.7		%REC	1	8/23/2004
Surr: 2-Fluorophenol	36.6	9.54-89.8		%REC	1	8/23/2004
Surr: 4-Terphenyl-d14	79.9	47.9-115		%REC	1	8/23/2004
Surr: Nitrobenzene-d5	41.0	38-106		%REC	1	8/23/2004
Surr: Phenol-d6	28.0	10.7-63.4		%REC	1	8/23/2004

EPA METHOD 8310: PAHS

Analyst: IC

Naphthalene	ND	2.5		µg/L	1	8/21/2004 5:24:02 PM
1-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 5:24:02 PM
2-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 5:24:02 PM
Acenaphthylene	ND	2.5		µg/L	1	8/21/2004 5:24:02 PM
Acenaphthene	ND	2.5		µg/L	1	8/21/2004 5:24:02 PM
Fluorene	ND	0.80		µg/L	1	8/21/2004 5:24:02 PM
Phenanthrene	ND	0.60		µg/L	1	8/21/2004 5:24:02 PM
Anthracene	ND	0.60		µg/L	1	8/21/2004 5:24:02 PM
Fluoranthene	ND	0.30		µg/L	1	8/21/2004 5:24:02 PM
Pyrene	ND	0.30		µg/L	1	8/21/2004 5:24:02 PM
Benz(a)anthracene	ND	0.020		µg/L	1	8/21/2004 5:24:02 PM
Chrysene	ND	0.20		µg/L	1	8/21/2004 5:24:02 PM
Benzo(b)fluoranthene	ND	0.050		µg/L	1	8/21/2004 5:24:02 PM
Benzo(k)fluoranthene	ND	0.020		µg/L	1	8/21/2004 5:24:02 PM
Benzo(a)pyrene	ND	0.020		µg/L	1	8/21/2004 5:24:02 PM
Dibenz(a,h)anthracene	ND	0.040		µg/L	1	8/21/2004 5:24:02 PM
Benzo(g,h,i)perylene	ND	0.030		µg/L	1	8/21/2004 5:24:02 PM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	8/21/2004 5:24:02 PM
Surr: Benzo(e)pyrene	91.0	54-102		%REC	1	8/21/2004 5:24:02 PM

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: CMC

Specific Conductance	1200	0.010		µmhos/cm	1	8/11/2004
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EPA METHOD 7470: MERCURY

Analyst: CMC

Mercury	ND	0.00020		mg/L	1	8/9/2004
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EPA METHOD 6010C: DISSOLVED METALS

Analyst: NMO

Arsenic	ND	0.020		mg/L	1	8/6/2004 10:11:15 AM
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Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-1-C

Lab Order: 0408039

Collection Date: 8/4/2004 1:30:00 PM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-06

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Barium	0.042	0.0020		mg/L	1	8/6/2004 10:11:15 AM
Cadmium	ND	0.0020		mg/L	1	8/6/2004 10:11:15 AM
Calcium	3.8	1.0		mg/L	1	8/6/2004 10:11:15 AM
Chromium	ND	0.0060		mg/L	1	8/6/2004 10:11:15 AM
Lead	ND	0.0050		mg/L	1	8/6/2004 10:11:15 AM
Magnesium	ND	1.0		mg/L	1	8/6/2004 10:11:15 AM
Potassium	2.0	1.0		mg/L	1	8/6/2004 10:11:15 AM
Selenium	ND	0.050		mg/L	1	8/6/2004 10:11:15 AM
Silver	ND	0.0050		mg/L	1	8/6/2004 10:11:15 AM
Sodium	200	10		mg/L	10	8/6/2004 10:55:41 AM
Uranium	ND	0.10		mg/L	1	8/6/2004 10:11:15 AM
EPA METHOD 160.1: TDS						Analyst: JEB
Total Dissolved Solids	970	50		mg/L	1	8/10/2004

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-C

Lab Order: 0408039

Collection Date: 8/4/2004 10:30:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-03

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	2.2	0.10		mg/L	1	8/5/2004 2:47:05 PM
Chloride	46	2.5		mg/L	25	8/6/2004 5:44:35 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/5/2004 2:47:05 PM
Bromide	0.78	0.10		mg/L	1	8/5/2004 2:47:05 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/5/2004 2:47:05 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/5/2004 2:47:05 PM
Sulfate	230	13		mg/L	25	8/6/2004 5:44:35 PM
EPA METHOD 310.1: ALKALINITY						Analyst: MAP
Alkalinity, Total (As CaCO3)	540	4.0		mg/L CaCO3	2	8/16/2004
Carbonate	ND	4.0		mg/L CaCO3	2	8/16/2004
Bicarbonate	540	4.0		mg/L CaCO3	2	8/16/2004
EPA METHOD 504.1: EDB						Analyst: SCC
1,2-Dibromoethane	ND	0.010		µg/L	1	8/6/2004 1:48:09 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/14/2004 11:21:38 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/14/2004 11:21:38 PM
Surr: DNOP	117	58-140		%REC	1	8/14/2004 11:21:38 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: BDH
Gasoline Range Organics (GRO)	ND	0.50		mg/L	10	8/12/2004 12:35:25 PM
Surr: BFB	97.6	74-118		%REC	10	8/12/2004 12:35:25 PM
EPA METHOD 8082: PCB'S						Analyst: JMP
Aroclor 1016	ND	1.0		µg/L	1	8/24/2004 7:40:00 AM
Aroclor 1221	ND	5.0		µg/L	1	8/24/2004 7:40:00 AM
Aroclor 1232	ND	1.0		µg/L	1	8/24/2004 7:40:00 AM
Aroclor 1242	ND	1.0		µg/L	1	8/24/2004 7:40:00 AM
Aroclor 1248	ND	1.0		µg/L	1	8/24/2004 7:40:00 AM
Aroclor 1254	ND	1.0		µg/L	1	8/24/2004 7:40:00 AM
Aroclor 1260	ND	1.0		µg/L	1	8/24/2004 7:40:00 AM
Surr: Decachlorobiphenyl	79.2	45.3-140		%REC	1	8/24/2004 7:40:00 AM
Surr: Tetrachloro-m-xylene	66.0	28.1-139		%REC	1	8/24/2004 7:40:00 AM
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	10		µg/L	10	8/10/2004
Toluene	ND	10		µg/L	10	8/10/2004
Ethylbenzene	ND	10		µg/L	10	8/10/2004
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	8/10/2004
1,2,4-Trimethylbenzene	ND	10		µg/L	10	8/10/2004
1,3,5-Trimethylbenzene	ND	10		µg/L	10	8/10/2004
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	8/10/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-C

Lab Order: 0408039

Collection Date: 8/4/2004 10:30:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-03

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	8/10/2004
Naphthalene	ND	20		µg/L	10	8/10/2004
1-Methylnaphthalene	ND	40		µg/L	10	8/10/2004
2-Methylnaphthalene	ND	40		µg/L	10	8/10/2004
Acetone	1500	100		µg/L	10	8/10/2004
Bromobenzene	ND	10		µg/L	10	8/10/2004
Bromochloromethane	ND	10		µg/L	10	8/10/2004
Bromodichloromethane	ND	10		µg/L	10	8/10/2004
Bromoform	ND	10		µg/L	10	8/10/2004
Bromomethane	ND	20		µg/L	10	8/10/2004
2-Butanone	ND	100		µg/L	10	8/10/2004
Carbon disulfide	ND	100		µg/L	10	8/10/2004
Carbon Tetrachloride	ND	10		µg/L	10	8/10/2004
Chlorobenzene	ND	10		µg/L	10	8/10/2004
Chloroethane	ND	20		µg/L	10	8/10/2004
Chloroform	ND	10		µg/L	10	8/10/2004
Chloromethane	ND	10		µg/L	10	8/10/2004
2-Chlorotoluene	ND	10		µg/L	10	8/10/2004
4-Chlorotoluene	ND	10		µg/L	10	8/10/2004
cis-1,2-DCE	ND	10		µg/L	10	8/10/2004
cis-1,3-Dichloropropene	ND	10		µg/L	10	8/10/2004
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	8/10/2004
Dibromochloromethane	ND	10		µg/L	10	8/10/2004
Dibromomethane	ND	20		µg/L	10	8/10/2004
1,2-Dichlorobenzene	ND	10		µg/L	10	8/10/2004
1,3-Dichlorobenzene	ND	10		µg/L	10	8/10/2004
1,4-Dichlorobenzene	ND	10		µg/L	10	8/10/2004
Dichlorodifluoromethane	ND	10		µg/L	10	8/10/2004
1,1-Dichloroethane	ND	10		µg/L	10	8/10/2004
1,1-Dichloroethene	ND	10		µg/L	10	8/10/2004
1,2-Dichloropropane	ND	10		µg/L	10	8/10/2004
1,3-Dichloropropane	ND	10		µg/L	10	8/10/2004
2,2-Dichloropropane	ND	10		µg/L	10	8/10/2004
1,1-Dichloropropene	ND	10		µg/L	10	8/10/2004
Hexachlorobutadiene	ND	10		µg/L	10	8/10/2004
2-Hexanone	ND	100		µg/L	10	8/10/2004
Isopropylbenzene	ND	10		µg/L	10	8/10/2004
4-Isopropyltoluene	ND	10		µg/L	10	8/10/2004
4-Methyl-2-pentanone	ND	100		µg/L	10	8/10/2004
Methylene Chloride	ND	30		µg/L	10	8/10/2004
n-Butylbenzene	ND	10		µg/L	10	8/10/2004
n-Propylbenzene	ND	10		µg/L	10	8/10/2004

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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2-C

Lab Order: 0408039

Collection Date: 8/4/2004 10:30:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-03

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
sec-Butylbenzene	ND	10		µg/L	10	8/10/2004
Styrene	ND	10		µg/L	10	8/10/2004
tert-Butylbenzene	ND	10		µg/L	10	8/10/2004
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	8/10/2004
1,1,2,2-Tetrachloroethane	ND	10		µg/L	10	8/10/2004
Tetrachloroethene (PCE)	ND	10		µg/L	10	8/10/2004
trans-1,2-DCE	ND	10		µg/L	10	8/10/2004
trans-1,3-Dichloropropene	ND	10		µg/L	10	8/10/2004
1,2,3-Trichlorobenzene	ND	10		µg/L	10	8/10/2004
1,2,4-Trichlorobenzene	ND	10		µg/L	10	8/10/2004
1,1,1-Trichloroethane	ND	10		µg/L	10	8/10/2004
1,1,2-Trichloroethane	ND	10		µg/L	10	8/10/2004
Trichloroethene (TCE)	ND	10		µg/L	10	8/10/2004
Trichlorofluoromethane	ND	10		µg/L	10	8/10/2004
1,2,3-Trichloropropane	ND	20		µg/L	10	8/10/2004
Vinyl chloride	ND	10		µg/L	10	8/10/2004
Xylenes, Total	ND	10		µg/L	10	8/10/2004
Surr: 1,2-Dichloroethane-d4	97.8	70.6-124		%REC	10	8/10/2004
Surr: 4-Bromofluorobenzene	101	76.4-130		%REC	10	8/10/2004
Surr: Dibromofluoromethane	109	67.2-131		%REC	10	8/10/2004
Surr: Toluene-d8	98.4	82.1-123		%REC	10	8/10/2004

EPA METHOD 8270D: SEMIVOLATILES

Analyst: GAB

Acenaphthene	ND	50		µg/L	1	8/23/2004
Acenaphthylene	ND	50		µg/L	1	8/23/2004
Aniline	ND	50		µg/L	1	8/23/2004
Anthracene	ND	50		µg/L	1	8/23/2004
Azobenzene	ND	50		µg/L	1	8/23/2004
Benz(a)anthracene	ND	75		µg/L	1	8/23/2004
Benzo(a)pyrene	ND	50		µg/L	1	8/23/2004
Benzo(b)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzo(g,h,i)perylene	ND	50		µg/L	1	8/23/2004
Benzo(k)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzoic acid	ND	250		µg/L	1	8/23/2004
Benzyl alcohol	ND	100		µg/L	1	8/23/2004
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	8/23/2004
Bis(2-chloroethyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-chloroisopropyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-ethylhexyl)phthalate	ND	75		µg/L	1	8/23/2004
4-Bromophenyl phenyl ether	ND	50		µg/L	1	8/23/2004
Butyl benzyl phthalate	ND	75		µg/L	1	8/23/2004
Carbazole	ND	50		µg/L	1	8/23/2004
4-Chloro-3-methylphenol	ND	100		µg/L	1	8/23/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408039
Project: Boundry Well Initial Sampling
Lab ID: 0408039-03

Client Sample ID: BW-2-C
Collection Date: 8/4/2004 10:30:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
4-Chloroaniline	ND	100		µg/L	1	8/23/2004
2-Chloronaphthalene	ND	50		µg/L	1	8/23/2004
2-Chlorophenol	ND	50		µg/L	1	8/23/2004
4-Chlorophenyl phenyl ether	ND	75		µg/L	1	8/23/2004
Chrysene	ND	75		µg/L	1	8/23/2004
Di-n-butyl phthalate	ND	50		µg/L	1	8/23/2004
Di-n-octyl phthalate	ND	75		µg/L	1	8/23/2004
Dibenz(a,h)anthracene	ND	50		µg/L	1	8/23/2004
Dibenzofuran	ND	50		µg/L	1	8/23/2004
1,2-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,3-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,4-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
3,3'-Dichlorobenzidine	ND	75		µg/L	1	8/23/2004
Diethyl phthalate	ND	50		µg/L	1	8/23/2004
Dimethyl phthalate	ND	50		µg/L	1	8/23/2004
2,4-Dichlorophenol	ND	50		µg/L	1	8/23/2004
2,4-Dimethylphenol	ND	50		µg/L	1	8/23/2004
4,6-Dinitro-2-methylphenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrophenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
2,6-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
Fluoranthene	ND	50		µg/L	1	8/23/2004
Fluorene	ND	50		µg/L	1	8/23/2004
Hexachlorobenzene	ND	50		µg/L	1	8/23/2004
Hexachlorobutadiene	ND	50		µg/L	1	8/23/2004
Hexachlorocyclopentadiene	ND	50		µg/L	1	8/23/2004
Hexachloroethane	ND	50		µg/L	1	8/23/2004
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	8/23/2004
Isophorone	ND	50		µg/L	1	8/23/2004
2-Methylnaphthalene	ND	50		µg/L	1	8/23/2004
2-Methylphenol	ND	75		µg/L	1	8/23/2004
3+4-Methylphenol	ND	50		µg/L	1	8/23/2004
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodimethylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodiphenylamine	ND	50		µg/L	1	8/23/2004
Naphthalene	ND	50		µg/L	1	8/23/2004
2-Nitroaniline	ND	250		µg/L	1	8/23/2004
3-Nitroaniline	ND	250		µg/L	1	8/23/2004
4-Nitroaniline	ND	100		µg/L	1	8/23/2004
Nitrobenzene	ND	50		µg/L	1	8/23/2004
2-Nitrophenol	ND	75		µg/L	1	8/23/2004
4-Nitrophenol	ND	250		µg/L	1	8/23/2004

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408039
Project: Boundry Well Initial Sampling
Lab ID: 0408039-03

Client Sample ID: BW-2-C
Collection Date: 8/4/2004 10:30:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Pentachlorophenol	ND	250		µg/L	1	8/23/2004
Phenanthrene	ND	50		µg/L	1	8/23/2004
Phenol	ND	50		µg/L	1	8/23/2004
Pyrene	ND	75		µg/L	1	8/23/2004
Pyridine	ND	150		µg/L	1	8/23/2004
1,2,4-Trichlorobenzene	ND	50		µg/L	1	8/23/2004
2,4,5-Trichlorophenol	ND	50		µg/L	1	8/23/2004
2,4,6-Trichlorophenol	ND	75		µg/L	1	8/23/2004
Surr: 2,4,6-Tribromophenol	64.5	16.6-115		%REC	1	8/23/2004
Surr: 2-Fluorobiphenyl	59.5	37-95.7		%REC	1	8/23/2004
Surr: 2-Fluorophenol	49.3	9.54-89.8		%REC	1	8/23/2004
Surr: 4-Terphenyl-d14	79.8	47.9-115		%REC	1	8/23/2004
Surr: Nitrobenzene-d5	55.0	38-106		%REC	1	8/23/2004
Surr: Phenol-d6	39.7	10.7-63.4		%REC	1	8/23/2004

EPA METHOD 8310: PAHS

Analyst: IC

Naphthalene	ND	2.5		µg/L	1	8/21/2004 2:59:59 PM
1-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 2:59:59 PM
2-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 2:59:59 PM
Acenaphthylene	ND	2.5		µg/L	1	8/21/2004 2:59:59 PM
Acenaphthene	ND	2.5		µg/L	1	8/21/2004 2:59:59 PM
Fluorene	ND	0.80		µg/L	1	8/21/2004 2:59:59 PM
Phenanthrene	ND	0.60		µg/L	1	8/21/2004 2:59:59 PM
Anthracene	ND	0.60		µg/L	1	8/21/2004 2:59:59 PM
Fluoranthene	ND	0.30		µg/L	1	8/21/2004 2:59:59 PM
Pyrene	ND	0.30		µg/L	1	8/21/2004 2:59:59 PM
Benz(a)anthracene	ND	0.020		µg/L	1	8/21/2004 2:59:59 PM
Chrysene	ND	0.20		µg/L	1	8/21/2004 2:59:59 PM
Benzo(b)fluoranthene	ND	0.050		µg/L	1	8/21/2004 2:59:59 PM
Benzo(k)fluoranthene	ND	0.020		µg/L	1	8/21/2004 2:59:59 PM
Benzo(a)pyrene	ND	0.020		µg/L	1	8/21/2004 2:59:59 PM
Dibenz(a,h)anthracene	ND	0.040		µg/L	1	8/21/2004 2:59:59 PM
Benzo(g,h,i)perylene	ND	0.030		µg/L	1	8/21/2004 2:59:59 PM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	8/21/2004 2:59:59 PM
Surr: Benzo(e)pyrene	61.5	54-102		%REC	1	8/21/2004 2:59:59 PM

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: CMC

Specific Conductance	1300	0.010		µmhos/cm	1	8/11/2004
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EPA METHOD 7470: MERCURY

Analyst: CMC

Mercury	ND	0.00020		mg/L	1	8/9/2004
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EPA METHOD 6010C: DISSOLVED METALS

Analyst: NMO

Arsenic	ND	0.020		mg/L	1	8/6/2004 9:47:29 AM
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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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408039
Project: Boundry Well Initial Sampling
Lab ID: 0408039-03

Client Sample ID: BW-2-C
Collection Date: 8/4/2004 10:30:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Barium	0.047	0.0020		mg/L	1	8/6/2004 9:47:29 AM
Cadmium	ND	0.0020		mg/L	1	8/6/2004 9:47:29 AM
Calcium	5.6	1.0		mg/L	1	8/6/2004 9:47:29 AM
Chromium	ND	0.0060		mg/L	1	8/6/2004 9:47:29 AM
Lead	ND	0.0050		mg/L	1	8/6/2004 9:47:29 AM
Magnesium	1.5	1.0		mg/L	1	8/6/2004 9:47:29 AM
Potassium	2.0	1.0		mg/L	1	8/6/2004 9:47:29 AM
Selenium	ND	0.050		mg/L	1	8/6/2004 9:47:29 AM
Silver	ND	0.0050		mg/L	1	8/6/2004 9:47:29 AM
Sodium	300	10		mg/L	10	8/6/2004 10:38:16 AM
Uranium	ND	0.10		mg/L	1	8/6/2004 9:47:29 AM
EPA METHOD 160.1: TDS						Analyst: JEB
Total Dissolved Solids	970	50		mg/L	1	8/10/2004

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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408039
Project: Boundry Well Initial Sampling
Lab ID: 0408039-01

Client Sample ID: BW-3-C
Collection Date: 8/4/2004 9:00:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.95	0.10		mg/L	1	8/5/2004 2:13:33 PM
Chloride	25	0.10		mg/L	1	8/5/2004 2:13:33 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	8/5/2004 2:13:33 PM
Bromide	1.2	0.10		mg/L	1	8/5/2004 2:13:33 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	8/5/2004 2:13:33 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	8/5/2004 2:13:33 PM
Sulfate	440	25		mg/L	50	8/6/2004 5:27:47 PM
EPA METHOD 310.1: ALKALINITY						Analyst: MAP
Alkalinity, Total (As CaCO ₃)	220	4.0		mg/L CaCO ₃	2	8/16/2004
Carbonate	ND	4.0		mg/L CaCO ₃	2	8/16/2004
Bicarbonate	220	4.0		mg/L CaCO ₃	2	8/16/2004
EPA METHOD 504.1: EDB						Analyst: SCC
1,2-Dibromoethane	ND	0.010		µg/L	1	8/6/2004 12:55:54 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	8/14/2004 10:20:38 PM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/14/2004 10:20:38 PM
Surr: DNOP	112	58-140		%REC	1	8/14/2004 10:20:38 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: BDH
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	8/12/2004 11:34:32 AM
Surr: BFB	92.7	74-118		%REC	1	8/12/2004 11:34:32 AM
EPA METHOD 8082: PCB'S						Analyst: JMP
Aroclor 1016	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1221	ND	5.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1232	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1242	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1248	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1254	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Aroclor 1260	ND	1.0		µg/L	1	8/24/2004 6:08:36 AM
Surr: Decachlorobiphenyl	102	45.3-140		%REC	1	8/24/2004 6:08:36 AM
Surr: Tetrachloro-m-xylene	80.0	28.1-139		%REC	1	8/24/2004 6:08:36 AM
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	5.2	1.0		µg/L	1	8/10/2004
Toluene	1.0	1.0		µg/L	1	8/10/2004
Ethylbenzene	ND	1.0		µg/L	1	8/10/2004
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/10/2004

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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-3-C

Lab Order: 0408039

Collection Date: 8/4/2004 9:00:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/10/2004
Naphthalene	ND	2.0		µg/L	1	8/10/2004
1-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
2-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
Acetone	ND	10		µg/L	1	8/10/2004
Bromobenzene	ND	1.0		µg/L	1	8/10/2004
Bromochloromethane	ND	1.0		µg/L	1	8/10/2004
Bromodichloromethane	ND	1.0		µg/L	1	8/10/2004
Bromoform	ND	1.0		µg/L	1	8/10/2004
Bromomethane	ND	2.0		µg/L	1	8/10/2004
2-Butanone	ND	10		µg/L	1	8/10/2004
Carbon disulfide	ND	10		µg/L	1	8/10/2004
Carbon Tetrachloride	ND	1.0		µg/L	1	8/10/2004
Chlorobenzene	ND	1.0		µg/L	1	8/10/2004
Chloroethane	ND	2.0		µg/L	1	8/10/2004
Chloroform	ND	1.0		µg/L	1	8/10/2004
Chloromethane	ND	1.0		µg/L	1	8/10/2004
2-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
4-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
cis-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/10/2004
Dibromochloromethane	ND	1.0		µg/L	1	8/10/2004
Dibromomethane	ND	2.0		µg/L	1	8/10/2004
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,3-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
2,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
Hexachlorobutadiene	ND	1.0		µg/L	1	8/10/2004
2-Hexanone	ND	10		µg/L	1	8/10/2004
Isopropylbenzene	ND	1.0		µg/L	1	8/10/2004
4-Isopropyltoluene	ND	1.0		µg/L	1	8/10/2004
4-Methyl-2-pentanone	ND	10		µg/L	1	8/10/2004
Methylene Chloride	ND	3.0		µg/L	1	8/10/2004
n-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
n-Propylbenzene	ND	1.0		µg/L	1	8/10/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-3-C

Lab Order: 0408039

Collection Date: 8/4/2004 9:00:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
sec-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
Styrene	ND	1.0		µg/L	1	8/10/2004
tert-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/10/2004
trans-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/10/2004
Trichlorofluoromethane	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/10/2004
Vinyl chloride	ND	1.0		µg/L	1	8/10/2004
Xylenes, Total	1.5	1.0		µg/L	1	8/10/2004
Surr: 1,2-Dichloroethane-d4	97.1	70.6-124		%REC	1	8/10/2004
Surr: 4-Bromofluorobenzene	101	76.4-130		%REC	1	8/10/2004
Surr: Dibromofluoromethane	106	67.2-131		%REC	1	8/10/2004
Surr: Toluene-d8	101	82.1-123		%REC	1	8/10/2004

EPA METHOD 8270D: SEMIVOLATILES

Analyst: GAB

Acenaphthene	ND	50		µg/L	1	8/23/2004
Acenaphthylene	ND	50		µg/L	1	8/23/2004
Aniline	ND	50		µg/L	1	8/23/2004
Anthracene	ND	50		µg/L	1	8/23/2004
Azobenzene	ND	50		µg/L	1	8/23/2004
Benz(a)anthracene	ND	75		µg/L	1	8/23/2004
Benzo(a)pyrene	ND	50		µg/L	1	8/23/2004
Benzo(b)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzo(g,h,i)perylene	ND	50		µg/L	1	8/23/2004
Benzo(k)fluoranthene	ND	50		µg/L	1	8/23/2004
Benzoic acid	ND	250		µg/L	1	8/23/2004
Benzyl alcohol	ND	100		µg/L	1	8/23/2004
Bis(2-chloroethoxy)methane	ND	50		µg/L	1	8/23/2004
Bis(2-chloroethyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-chloroisopropyl)ether	ND	75		µg/L	1	8/23/2004
Bis(2-ethylhexyl)phthalate	ND	75		µg/L	1	8/23/2004
4-Bromophenyl phenyl ether	ND	50		µg/L	1	8/23/2004
Butyl benzyl phthalate	ND	75		µg/L	1	8/23/2004
Carbazole	ND	50		µg/L	1	8/23/2004
4-Chloro-3-methylphenol	ND	100		µg/L	1	8/23/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-3-C

Lab Order: 0408039

Collection Date: 8/4/2004 9:00:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
4-Chloroaniline	ND	100		µg/L	1	8/23/2004
2-Chloronaphthalene	ND	50		µg/L	1	8/23/2004
2-Chlorophenol	ND	50		µg/L	1	8/23/2004
4-Chlorophenyl phenyl ether	ND	75		µg/L	1	8/23/2004
Chrysene	ND	75		µg/L	1	8/23/2004
Di-n-butyl phthalate	ND	50		µg/L	1	8/23/2004
Di-n-octyl phthalate	ND	75		µg/L	1	8/23/2004
Dibenz(a,h)anthracene	ND	50		µg/L	1	8/23/2004
Dibenzofuran	ND	50		µg/L	1	8/23/2004
1,2-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,3-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
1,4-Dichlorobenzene	ND	50		µg/L	1	8/23/2004
3,3'-Dichlorobenzidine	ND	75		µg/L	1	8/23/2004
Diethyl phthalate	ND	50		µg/L	1	8/23/2004
Dimethyl phthalate	ND	50		µg/L	1	8/23/2004
2,4-Dichlorophenol	ND	50		µg/L	1	8/23/2004
2,4-Dimethylphenol	ND	50		µg/L	1	8/23/2004
4,6-Dinitro-2-methylphenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrophenol	ND	250		µg/L	1	8/23/2004
2,4-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
2,6-Dinitrotoluene	ND	50		µg/L	1	8/23/2004
Fluoranthene	ND	50		µg/L	1	8/23/2004
Fluorene	ND	50		µg/L	1	8/23/2004
Hexachlorobenzene	ND	50		µg/L	1	8/23/2004
Hexachlorobutadiene	ND	50		µg/L	1	8/23/2004
Hexachlorocyclopentadiene	ND	50		µg/L	1	8/23/2004
Hexachloroethane	ND	50		µg/L	1	8/23/2004
Indeno(1,2,3-cd)pyrene	ND	50		µg/L	1	8/23/2004
Isophorone	ND	50		µg/L	1	8/23/2004
2-Methylnaphthalene	ND	50		µg/L	1	8/23/2004
2-Methylphenol	ND	75		µg/L	1	8/23/2004
3+4-Methylphenol	ND	50		µg/L	1	8/23/2004
N-Nitrosodi-n-propylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodimethylamine	ND	50		µg/L	1	8/23/2004
N-Nitrosodiphenylamine	ND	50		µg/L	1	8/23/2004
Naphthalene	ND	50		µg/L	1	8/23/2004
2-Nitroaniline	ND	250		µg/L	1	8/23/2004
3-Nitroaniline	ND	250		µg/L	1	8/23/2004
4-Nitroaniline	ND	100		µg/L	1	8/23/2004
Nitrobenzene	ND	50		µg/L	1	8/23/2004
2-Nitrophenol	ND	75		µg/L	1	8/23/2004
4-Nitrophenol	ND	250		µg/L	1	8/23/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-3-C

Lab Order: 0408039

Collection Date: 8/4/2004 9:00:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Pentachlorophenol	ND	250		µg/L	1	8/23/2004
Phenanthrene	ND	50		µg/L	1	8/23/2004
Phenol	ND	50		µg/L	1	8/23/2004
Pyrene	ND	75		µg/L	1	8/23/2004
Pyridine	ND	150		µg/L	1	8/23/2004
1,2,4-Trichlorobenzene	ND	50		µg/L	1	8/23/2004
2,4,5-Trichlorophenol	ND	50		µg/L	1	8/23/2004
2,4,6-Trichlorophenol	ND	75		µg/L	1	8/23/2004
Surr: 2,4,6-Tribromophenol	55.6	16.6-115		%REC	1	8/23/2004
Surr: 2-Fluorobiphenyl	48.9	37-95.7		%REC	1	8/23/2004
Surr: 2-Fluorophenol	45.1	9.54-89.8		%REC	1	8/23/2004
Surr: 4-Terphenyl-d14	81.0	47.9-115		%REC	1	8/23/2004
Surr: Nitrobenzene-d5	50.9	38-106		%REC	1	8/23/2004
Surr: Phenol-d6	34.7	10.7-63.4		%REC	1	8/23/2004

EPA METHOD 8310: PAHS

Analyst: IC

Naphthalene	ND	2.5		µg/L	1	8/21/2004 12:36:00 PM
1-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 12:36:00 PM
2-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 12:36:00 PM
Acenaphthylene	ND	2.5		µg/L	1	8/21/2004 12:36:00 PM
Acenaphthene	ND	2.5		µg/L	1	8/21/2004 12:36:00 PM
Fluorene	ND	0.80		µg/L	1	8/21/2004 12:36:00 PM
Phenanthrene	ND	0.60		µg/L	1	8/21/2004 12:36:00 PM
Anthracene	ND	0.60		µg/L	1	8/21/2004 12:36:00 PM
Fluoranthene	ND	0.30		µg/L	1	8/21/2004 12:36:00 PM
Pyrene	ND	0.30		µg/L	1	8/21/2004 12:36:00 PM
Benz(a)anthracene	ND	0.020		µg/L	1	8/21/2004 12:36:00 PM
Chrysene	ND	0.20		µg/L	1	8/21/2004 12:36:00 PM
Benzo(b)fluoranthene	ND	0.050		µg/L	1	8/21/2004 12:36:00 PM
Benzo(k)fluoranthene	ND	0.020		µg/L	1	8/21/2004 12:36:00 PM
Benzo(a)pyrene	ND	0.020		µg/L	1	8/21/2004 12:36:00 PM
Dibenz(a,h)anthracene	ND	0.040		µg/L	1	8/21/2004 12:36:00 PM
Benzo(g,h,i)perylene	ND	0.030		µg/L	1	8/21/2004 12:36:00 PM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	8/21/2004 12:36:00 PM
Surr: Benzo(e)pyrene	86.9	54-102		%REC	1	8/21/2004 12:36:00 PM

EPA 120.1: SPECIFIC CONDUCTANCE

Analyst: CMC

Specific Conductance	1300	0.010		µmhos/cm	1	8/11/2004
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EPA METHOD 7470: MERCURY

Analyst: CMC

Mercury	ND	0.00020		mg/L	1	8/9/2004
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EPA METHOD 6010C: DISSOLVED METALS

Analyst: NMO

Arsenic	ND	0.020		mg/L	1	8/6/2004 9:38:54 AM
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Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: BW-3-C

Lab Order: 0408039

Collection Date: 8/4/2004 9:00:00 AM

Project: Boundry Well Initial Sampling

Lab ID: 0408039-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Barium	0.051	0.0020		mg/L	1	8/6/2004 9:38:54 AM
Cadmium	ND	0.0020		mg/L	1	8/6/2004 9:38:54 AM
Calcium	45	1.0		mg/L	1	8/6/2004 9:38:54 AM
Chromium	ND	0.0060		mg/L	1	8/6/2004 9:38:54 AM
Lead	ND	0.0050		mg/L	1	8/6/2004 9:38:54 AM
Magnesium	9.8	1.0		mg/L	1	8/6/2004 9:38:54 AM
Potassium	5.3	1.0		mg/L	1	8/6/2004 9:38:54 AM
Selenium	ND	0.050		mg/L	1	8/6/2004 9:38:54 AM
Silver	ND	0.0050		mg/L	1	8/6/2004 9:38:54 AM
Sodium	230	10		mg/L	10	8/6/2004 10:32:27 AM
Uranium	ND	0.10		mg/L	1	8/6/2004 9:38:54 AM
EPA METHOD 160.1: TDS						Analyst: JEB
Total Dissolved Solids	940	50		mg/L	1	8/10/2004

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

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: TRIP BLANK

Lab Order: 0408039

Collection Date:

Project: Boundry Well Initial Sampling

Lab ID: 0408039-07

Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB						
1,2-Dibromoethane	ND	0.010		µg/L	1	Analyst: SCC 8/6/2004 2:42:14 PM
EPA METHOD 8015B: DIESEL RANGE						
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	Analyst: JMP 8/15/2004 1:24:12 AM
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	8/15/2004 1:24:12 AM
Surr: DNOP	114	58-140		%REC	1	8/15/2004 1:24:12 AM
EPA METHOD 8015B: GASOLINE RANGE						
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	Analyst: BDH 8/12/2004 2:37:53 PM
Surr: BFB	98.5	74-118		%REC	1	8/12/2004 2:37:53 PM
EPA METHOD 8260B: VOLATILES						
Benzene	ND	1.0		µg/L	1	Analyst: KTM 8/10/2004
Toluene	ND	1.0		µg/L	1	8/10/2004
Ethylbenzene	ND	1.0		µg/L	1	8/10/2004
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/10/2004
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/10/2004
Naphthalene	ND	2.0		µg/L	1	8/10/2004
1-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
2-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
Acetone	ND	10		µg/L	1	8/10/2004
Bromobenzene	ND	1.0		µg/L	1	8/10/2004
Bromochloromethane	ND	1.0		µg/L	1	8/10/2004
Bromodichloromethane	ND	1.0		µg/L	1	8/10/2004
Bromoform	ND	1.0		µg/L	1	8/10/2004
Bromomethane	ND	2.0		µg/L	1	8/10/2004
2-Butanone	ND	10		µg/L	1	8/10/2004
Carbon disulfide	ND	10		µg/L	1	8/10/2004
Carbon Tetrachloride	ND	1.0		µg/L	1	8/10/2004
Chlorobenzene	ND	1.0		µg/L	1	8/10/2004
Chloroethane	ND	2.0		µg/L	1	8/10/2004
Chloroform	ND	1.0		µg/L	1	8/10/2004
Chloromethane	ND	1.0		µg/L	1	8/10/2004
2-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
4-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
cis-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/10/2004
Dibromochloromethane	ND	1.0		µg/L	1	8/10/2004

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: TRIP BLANK

Lab Order: 0408039

Collection Date:

Project: Boundry Well Initial Sampling

Lab ID: 0408039-07

Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Dibromomethane	ND	2.0		µg/L	1	8/10/2004
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,3-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
2,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
Hexachlorobutadiene	ND	1.0		µg/L	1	8/10/2004
2-Hexanone	ND	10		µg/L	1	8/10/2004
Isopropylbenzene	ND	1.0		µg/L	1	8/10/2004
4-Isopropyltoluene	ND	1.0		µg/L	1	8/10/2004
4-Methyl-2-pentanone	ND	10		µg/L	1	8/10/2004
Methylene Chloride	ND	3.0		µg/L	1	8/10/2004
n-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
n-Propylbenzene	ND	1.0		µg/L	1	8/10/2004
sec-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
Styrene	ND	1.0		µg/L	1	8/10/2004
tert-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/10/2004
trans-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/10/2004
Trichlorofluoromethane	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/10/2004
Vinyl chloride	ND	1.0		µg/L	1	8/10/2004
Xylenes, Total	ND	1.0		µg/L	1	8/10/2004
Surr: 1,2-Dichloroethane-d4	105	70.6-124		%REC	1	8/10/2004
Surr: 4-Bromofluorobenzene	105	76.4-130		%REC	1	8/10/2004
Surr: Dibromofluoromethane	117	67.2-131		%REC	1	8/10/2004
Surr: Toluene-d8	98.2	82.1-123		%REC	1	8/10/2004

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



ENERGY LABORATORIES, INC. *2393 Salt Creek Highway (82601)* P.O. Box 3258 * Casper, WY 82602
Toll Free 888.235.0515 * 307.235.0515 * Fax 307.234.1639 * casper@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: Boundry Well
Lab ID: C04080302-001
Client Sample ID: BW-3-C (0408039-01)

Report Date: 08/23/04
Collection Date: 08/04/04 09:00
Date Received: 08/06/04
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
NON-METALS							
Cyanide, Total Automated	ND	mg/L		0.1		E335.3	08/12/04 11:45 eli-b
RADIONUCLIDES - TOTAL							
Radium 226	ND	pCi/L		2.5		E903.0	08/09/04 14:15 trs
Radium 228	ND	pCi/L		2.5		E904.0	08/09/04 14:15 pj

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: Boundry Well
Lab ID: C04080302-002
Client Sample ID: BW-3-B (0408039-02)

Report Date: 08/23/04
Collection Date: 08/04/04 09:30
Date Received: 08/06/04
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
NON-METALS							
Cyanide, Total Automated	ND	mg/L		0.1		E335.3	08/12/04 11:47 eli-b
RADIONUCLIDES - TOTAL							
Radium 226	ND	pCi/L		2.5		E903.0	08/09/04 14:15 trs
Radium 228	ND	pCi/L		2.5		E904.0	08/09/04 14:15 pj

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected above the reporting limit.



ENERGY LABORATORIES, INC. *2393 Salt Creek Highway (82601)* P.O. Box 3258 * Casper, WY 82602
Toll Free 888.235.0515 * 307.235.0515 * Fax 307.234.1639 * casper@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: Boundry Well
Lab ID: C04080302-003
Client Sample ID: BW-2-C (0408039-03)

Report Date: 08/23/04
Collection Date: 08/04/04 10:30
Date Received: 08/06/04
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
NON-METALS							
Cyanide, Total Automated	ND	mg/L		0.1		E335.3	08/12/04 11:49 elf-b
RADIONUCLIDES - TOTAL							
Radium 226	ND	pCi/L		2.5		E903.0	08/09/04 14:15 trs
Radium 228	ND	pCi/L		2.5		E904.0	08/09/04 14:15 pj

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.



ENERGY LABORATORIES, INC. *2393 Salt Creek Highway (82601)* P.O. Box 3258 * Casper, WY 82602
Toll Free 888.235.0515 * 307.235.0515 * Fax 307.234.1639 * casper@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental

Project: Boundry Well

Lab ID: C04080302-004

Client Sample ID: BW-2-A (0408039-04)

Report Date: 08/23/04

Collection Date: 08/04/04 11:30

Date Received: 08/06/04

Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
NON-METALS							
Cyanide, Total Automated	ND	mg/L		0.1		E335.3	08/12/04 11:51 eli-b
RADIONUCLIDES - TOTAL							
Radium 226	ND	pCi/L		2.5		E903.0	08/09/04 14:15 trs
Radium 228	ND	pCi/L		2.5		E904.0	08/09/04 14:15 pj

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected above the reporting limit.



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: Boundry Well
Lab ID: C04080302-005
Client Sample ID: BW-2-B (0408039-05)

Report Date: 08/23/04
Collection Date: 08/04/04 12:30
Date Received: 08/06/04
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
NON-METALS							
Cyanide, Total Automated	ND	mg/L		0.1		E335.3	08/12/04 11:53 eli-b
RADIONUCLIDES - TOTAL							
Radium 226	ND	pCi/L		2.5		E903.0	08/09/04 14:15 trs
Radium 228	ND	pCi/L		2.5		E904.0	08/09/04 14:15 pj

Report
Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected above the reporting limit.



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LABORATORY ANALYTICAL REPORT

Client: Hall Environmental
Project: Boundry Well
Lab ID: C04080302-006
Client Sample ID: BW-1-C (0408039-06)

Report Date: 08/23/04
Collection Date: 08/04/04 13:30
Date Received: 08/06/04
Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
NON-METALS							
Cyanide, Total Automated	ND	mg/L		0.1		E335.3	08/12/04 11:54 eli-b
RADIONUCLIDES - TOTAL							
Radium 226	ND	pCi/L		2.5		E903.0	08/09/04 14:15 trs
Radium 228	ND	pCi/L		2.5		E904.0	08/09/04 14:15 pj

Report RL - Analyte reporting limit.
Definitions: QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected above the reporting limit.

QA/QC Summary Report

Client: Hall Environmental

Project: Boundry Well

Report Date: 08/23/04

Work Order: C04080302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E335.3							Analytical Run: SUB-B46032		
Sample ID: ICV-1	Initial Calibration Verification Standard								08/12/04 10:58
Cyanide, Total Automated	0.149	mg/L	0.0050	99.7	90	110			
Method: E335.3							Batch: B_A2004-08-12_4_CN_01		
Sample ID: MBLK-5	Method Blank								08/12/04 11:05
Cyanide, Total Automated	ND	mg/L	0.002						
Sample ID: B04080553-001FMS	Matrix Spike								08/12/04 11:40
Cyanide, Total Automated	0.104	mg/L	0.0050	104	80	120			
Sample ID: B04080553-001FMSD	Matrix Spike Duplicate								08/12/04 11:42
Cyanide, Total Automated	0.108	mg/L	0.0050	108	80	120	3.1	10	
Sample ID: B04080573-001DMS	Matrix Spike								08/12/04 12:22
Cyanide, Total Automated	0.105	mg/L	0.0050	105	80	120			
Sample ID: B04080573-001DMSD	Matrix Spike Duplicate								08/12/04 12:24
Cyanide, Total Automated	0.103	mg/L	0.0050	103	80	120	2.4	10	
Sample ID: B04080748-001FMS	Matrix Spike								08/12/04 12:48
Cyanide, Total Automated	0.111	mg/L	0.0050	111	80	120			
Sample ID: B04080748-001FMSD	Matrix Spike Duplicate								08/12/04 12:50
Cyanide, Total Automated	0.117	mg/L	0.0050	117	80	120	5.1	10	
Method: E903.0							Batch: RA226-0669		
Sample ID: C04080257-001AMS	Matrix Spike								08/09/04 14:15
Radium 226	25	pCi/L	0.20	80.4	70	130			
Sample ID: C04080257-001AMSD	Matrix Spike Duplicate								08/09/04 14:15
Radium 226	27	pCi/L	0.20	87.7	70	130	7.0	30	
Sample ID: MB-RA226-0669	Method Blank								08/09/04 14:15
Radium 226	ND	pCi/L	0.2						
Sample ID: LCS-RA226-0669	Laboratory Control Spike								08/09/04 14:15
Radium 226	13	pCi/L	0.20	83.5	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QA/QC Summary Report

Client: Hall Environmental
Project: Boundry Well

Report Date: 08/23/04
Work Order: C04080302

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E904.0									Batch: R38618
Sample ID: C04080325-001A	Matrix Spike								08/09/04 14:15
Radium 228	26	pCi/L	1.0	117	70	130			
Sample ID: C04080325-001A	Matrix Spike Duplicate								08/09/04 14:15
Radium 228	24	pCi/L	1.0	105	70	130	11	30	
Sample ID: MB-R38618	Method Blank								08/09/04 14:15
Radium 228	ND	pCi/L	1						
Sample ID: LCS-R38618	Laboratory Control Spike								08/09/04 14:15
Radium 228	12	pCi/L	1.0	85.9	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

QC SUMMARY REPORT
Method Blank

CLIENT: Giant Refining Co

Work Order: 0408039

Project: Boundry Well Initial Sampling

Sample ID	MBLK	Batch ID: R12686	Test Code: E300	Units: mg/L	Analysis Date 8/5/2004 10:18:34 AM	Prep Date					
Client ID:		Run ID: LC_040805A			SeqNo: 294143						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Bromide	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									

Sample ID	MBLK	Batch ID: R12686	Test Code: E300	Units: mg/L	Analysis Date 8/5/2004 10:20:37 PM	Prep Date					
Client ID:			Run ID: LC_040805A		SeqNo: 294187						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Bromide	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0408039
Project: Boundary Well Initial Sampling

QC SUMMARY REPORT
 Method Blank

Sample ID	MBLK	Batch ID: R12709	Test Code: E300	Units: mg/L	Analysis Date	8/6/2004 12:32:35 PM	Prep Date				
Client ID:		Run ID:	LC_040806A		SeqNo:	295102					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									J
Chloride	0.01483	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Bromide	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									

Sample ID	MBLK	Batch ID: R12709	Test Code: E300	Units: mg/L	Analysis Date 8/6/2004 8:49:31 PM	Prep Date					
Client ID:			Run ID: LC_040806A		SeqNo: 295128						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Bromide	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									

Sample ID	MBLK	Batch ID: R12781	Test Code: E310.1	Units: mg/L CaCO3	Analysis Date 8/16/2004	Prep Date					
Client ID:		Run ID: WC_040816D	SeqNo: 296879								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2									
Carbonate	ND	2									
Bicarbonate	ND	2									

Qualifiers: ND - Not Detected at the Reporting Limit
 S - Spike Recovery outside accepted recovery limits
 B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits
 R - RPD outside accepted recovery limits

CLIENT: Giant Refining Co
Work Order: 0408039
Project: Boundry Well Initial Sampling

QC SUMMARY REPORT
 Method Blank

Sample ID	MB-6258	Batch ID:	6258	Test Code:	E504.1	Units:	µg/L	Analysis Date	8/6/2004 9:56:00 AM	Prep Date	8/6/2004			
Client ID:		Run ID:	ECD(14A)_040806A					SeqNo:	294277					
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane		ND		0.01										

Sample ID	MB-6289	Batch ID:	6289	Test Code:	SW8015	Units:	mg/L	Analysis Date	8/14/2004 8:48:28 PM	Prep Date	8/11/2004			
Client ID:		Run ID:	FID(17A)_2_040813A					SeqNo:	296866					
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		ND		1										
Motor Oil Range Organics (MRO)		ND		5										
Surr: DNOP		1.212		0	1	0		121	58	140	0			

Sample ID	Reagent Blank 5m	Batch ID: R12756	Test Code: SW8015	Units: mg/L	Analysis Date	8/12/2004 8:24:07 AM	Prep Date					
Client ID:		Run ID:	PIDFID_040812A		SeqNo:	296307						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		ND	0.05									
Surr: BFB		18.64	0	20	0	93.2	74	118	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

3

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
 Work Order: 0408039
 Project: Boundry Well Initial Sampling

Sample ID MB-6260	Batch ID: 6260	Test Code: SW8080A	Units: µg/L	Analysis Date 8/24/2004 2:18:30 AM	Prep Date 8/6/2004						
Client ID:	Run ID:	ECD(17A)_040822A	SeqNo: 298794								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1									
Aroclor 1221	ND	5									
Aroclor 1232	ND	1									
Aroclor 1242	ND	1									
Aroclor 1248	ND	1									
Aroclor 1254	ND	1									
Aroclor 1260	ND	1									
Surr: Decachlorobiphenyl	2.52	0	2.5	0	101	45.3	140	0			
Surr: Tetrachloro-m-xylene	1.72	0	2.5	0	68.8	28.1	139	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
 Work Order: 0408039
 Project: Boundry Well Initial Sampling

Sample ID	MB-6271	Batch ID: 6271	Test Code: SW8270A	Units: µg/L	Analysis Date	8/23/2004	Prep Date	8/9/2004			
Client ID:			Run ID:	ELMO_040823A	SeqNo:	298840					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	10									
Acenaphthylene	ND	10									
Aniline	ND	10									
Anthracene	ND	10									
Azobenzene	ND	10									
Benz(a)anthracene	ND	15									
Benzo(a)pyrene	ND	10									
Benzo(b)fluoranthene	ND	10									
Benzo(g,h,i)perylene	ND	10									
Benzo(k)fluoranthene	ND	10									
Benzoic acid	23.84	50									
Benzyl alcohol	ND	20									
Bis(2-chloroethoxy)methane	ND	10									
Bis(2-chloroethyl)ether	ND	15									
Bis(2-chloroisopropyl)ether	ND	15									
Bis(2-ethylhexyl)phthalate	ND	15									
4-Bromophenyl phenyl ether	ND	10									
Butyl benzyl phthalate	ND	15									
Carbazole	ND	10									
4-Chloro-3-methylphenol	ND	20									
4-Chloroaniline	ND	20									
2-Chloronaphthalene	ND	10									
2-Chlorophenol	ND	10									
4-Chlorophenyl phenyl ether	ND	15									
Chrysene	ND	15									
Di-n-butyl phthalate	ND	10									
Di-n-octyl phthalate	ND	15									
Dibenz(a,h)anthracene	ND	10									

J

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co

Work Order: 0408039

Project: Boundry Well Initial Sampling

Dibenzofuran	ND	10
1,2-Dichlorobenzene	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
3,3'-Dichlorobenzidine	ND	15
Diethyl phthalate	ND	10
Dimethyl phthalate	ND	10
2,4-Dichlorophenol	ND	10
2,4-Dimethylphenol	ND	10
4,6-Dinitro-2-methylphenol	ND	50
2,4-Dinitrophenol	ND	50
2,4-Dinitrotoluene	ND	10
2,6-Dinitrotoluene	ND	10
Fluoranthene	ND	10
Fluorene	ND	10
Hexachlorobenzene	ND	10
Hexachlorobutadiene	ND	10
Hexachlorocyclopentadiene	ND	10
Hexachloroethane	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Isophorone	ND	10
2-Methylnaphthalene	ND	10
2-Methylphenol	ND	15
3+4-Methylphenol	ND	10
N-Nitrosodi-n-propylamine	ND	10
N-Nitrosodimethylamine	ND	10
N-Nitrosodiphenylamine	ND	10
Naphthalene	ND	10
2-Nitroaniline	ND	50
3-Nitroaniline	ND	50
4-Nitroaniline	ND	20
Nitrobenzene	ND	10
2-Nitrophenol	ND	15

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
 Work Order: 0408039
 Project: Boundary Well Initial Sampling

Sample ID	MB-6265	Batch ID: 6265	Test Code: SW8310	Units: µg/L	Analysis Date	8/21/2004 10:12:01 AM	Prep Date	8/9/2004			
Client ID:			Run ID: HUGO_040820A		SeqNo: 298503						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	2.5									
1-Methylnaphthalene	ND	2.5									
2-Methylnaphthalene	ND	2.5									
Acenaphthylene	ND	2.5									
Acenaphthene	ND	2.5									
Fluorene	ND	0.8									
Phenanthrene	ND	0.6									
Anthracene	ND	0.6									
Fluoranthene	ND	0.3									
Pyrene	ND	0.3									
Benz(a)anthracene	ND	0.02									
Chrysene	ND	0.2									
Benzo(b)fluoranthene	ND	0.05									
Benzo(k)fluoranthene	ND	0.02									
Benzo(a)pyrene	ND	0.02									
Dibenz(a,h)anthracene	ND	0.04									
Benzo(g,h,i)perylene	ND	0.03									
Indeno(1,2,3-cd)pyrene	ND	0.08									
Surr: Benzo(e)pyrene	9.01	0	10	0	90.1	54	102	0			

Sample ID	MB-6267	Batch ID: 6267	Test Code: SW7470	Units: mg/L	Analysis Date	8/9/2004	Prep Date	8/9/2004				
Client ID:			Run ID: MI-LA254_040809A		SeqNo:	295021						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		ND		0.0002								

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
 Work Order: 0408039
 Project: Boundary Well Initial Sampling

Sample ID	MB	Batch ID: R12692	Test Code: SW6010A	Units: mg/L	Analysis Date 8/6/2004 8:35:37 AM			Prep Date			
Client ID:		Run ID:	ICP_040806A		SeqNo:	294294					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02									
Barium	ND	0.002									
Cadmium	ND	0.002									
Calcium	0.03671	1									J
Chromium	ND	0.006									
Lead	ND	0.005									
Magnesium	0.03883	1									J
Potassium	ND	1									
Selenium	ND	0.05									
Silver	ND	0.005									
Sodium	0.04847	1									J
Uranium	ND	0.1									

Sample ID	MB-6279	Batch ID	6279	Test Code	E160.1	Units	mg/L	Analysis Date	8/10/2004	Prep Date	8/10/2004
Client ID:		Run ID:	WC_040810C					SeqNo:	296935		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND										

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Work Order: 0408039

Project: Boundary Well Initial Sampling

QC SUMMARY REPORT

Method Blank

Sample ID	5ml rb	Batch ID: R12713	Test Code: SW8260B	Units: µg/L	Analysis Date	8/9/2004	Prep Date				
Client ID:		Run ID:	VAL_040809A		SeqNo:	295199					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Toluene	ND	1									
Ethylbenzene	ND	1									
Methyl tert-butyl ether (MTBE)	ND	1									
1,2,4-Trimethylbenzene	ND	1									
1,3,5-Trimethylbenzene	ND	1									
1,2-Dichloroethane (EDC)	ND	1									
1,2-Dibromoethane (EDB)	ND	1									
Naphthalene	ND	2									
1-Methylnaphthalene	ND	4									
2-Methylnaphthalene	ND	4									
Acetone	ND	10									
Bromobenzene	ND	1									
Bromochloromethane	ND	1									
Bromodichloromethane	ND	1									
Bromoform	ND	1									
Bromomethane	ND	2									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1									
Chlorobenzene	ND	1									
Chloroethane	ND	2									
Chloroform	ND	1									
Chloromethane	ND	1									
2-Chlorotoluene	ND	1									
4-Chlorotoluene	ND	1									
Dis-1,2-DCE	ND	1									

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co

Work Order: 0408039

Project: Boundry Well Initial Sampling

cis-1,3-Dichloropropene	ND	1
1,2-Dibromo-3-chloropropane	ND	2
Dibromochloromethane	ND	1
Dibromomethane	ND	2
1,2-Dichlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
Dichlorodifluoromethane	ND	1
1,1-Dichloroethane	ND	1
1,1-Dichloroethene	ND	1
1,2-Dichloropropane	ND	1
1,3-Dichloropropane	ND	1
2,2-Dichloropropane	ND	1
1,1-Dichloropropene	ND	1
Hexachlorobutadiene	ND	1
2-Hexanone	ND	10
Isopropylbenzene	ND	1
4-Isopropyltoluene	ND	1
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3
n-Butylbenzene	ND	1
n-Propylbenzene	ND	1
sec-Butylbenzene	ND	1
Styrene	ND	1
tert-Butylbenzene	ND	1
1,1,1,2-Tetrachloroethane	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Tetrachloroethene (PCE)	ND	1
trans-1,2-DCE	ND	1
trans-1,3-Dichloropropene	ND	1
1,2,3-Trichlorobenzene	ND	1
1,2,4-Trichlorobenzene	ND	1
1,1,1-Trichloroethane	ND	1

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co

Work Order: 0408039
Method Blank

Project: Boundry Well Initial Sampling

[illegible]

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co
Work Order: 0408039
Project: Boundry Well Initial Sampling

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID 0408039-01a msd		Batch ID: R12756	Test Code: SW8015	Units: mg/L		Analysis Date 8/12/2004 6:13:03 PM		Prep Date	
Client ID: BW-3-C		Run ID:	PIDFID_040812A	SeqNo: 296309					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	RPDLimit
Gasoline Range Organics (GRO)	0.526	0.05	0.5	0	105	80.3	116	0	
Surr: BFB	25.81	0	25	0	103	74	118	0	
Sample ID 0408039-01a msd		Batch ID: R12756	Test Code: SW8015	Units: mg/L		Analysis Date 8/12/2004 6:43:36 PM		Prep Date	
Client ID: BW-3-C		Run ID:	PIDFID_040812A	SeqNo: 296310					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	RPDLimit
Gasoline Range Organics (GRO)	0.5254	0.05	0.5	0	105	80.3	116	0.526	8.39
Surr: BFB	26.44	0	25	0	106	74	118	25.81	2.43
									0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 30-Aug-04

CLIENT: Giant Refining Co

Work Order: 0408039

Project: Boundary Well Initial Sampling

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS	Batch ID: R12686	Test Code: E300	Units: mg/L	Analysis Date 8/5/2004 10:35:20 AM	Prep Date					
Client ID:		Run ID: LC_040805A			SeqNo: 294144						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4755	0.1	0.5	0	95.1	90	110	0			
Chloride	4.917	0.1	5	0	98.3	90	110	0			
Nitrogen, Nitrite (As N)	0.958	0.1	1	0	95.8	90	110	0			
Bromide	2.426	0.1	2.5	0	97.1	90	110	0			
Nitrogen, Nitrate (As N)	2.436	0.1	2.5	0	97.4	90	110	0			
Phosphorus, Orthophosphate (As P)	4.614	0.5	5	0	92.3	90	110	0			
Sulfate	9.912	0.5	10	0	99.1	90	110	0			

Sample ID	LCS	Batch ID: R12686	Test Code: E300	Units: mg/L	Analysis Date 8/5/2004 10:54:14 PM	Prep Date					
Client ID:		Run ID: LC_040805A			SeqNo: 294189						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4508	0.1	0.5	0	90.2	90	110	0			
Chloride	4.853	0.1	5	0	97.1	90	110	0			
Nitrogen, Nitrite (As N)	0.9332	0.1	1	0	93.3	90	110	0			
Bromide	2.328	0.1	2.5	0	93.1	90	110	0			
Nitrogen, Nitrate (As N)	2.372	0.1	2.5	0	94.9	90	110	0			
Phosphorus, Orthophosphate (As P)	4.59	0.5	5	0	91.8	90	110	0			
Sulfate	9.725	0.5	10	0	97.2	90	110	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Giant Refining Co

Work Order: 0408039

Project: Boundry Well Initial Sampling

Sample ID	LCS	Batch ID	R12709	Test Code	E300	Units	mg/L	Analysis Date	8/6/2004 12:49:23 PM	Prep Date			
Client ID:		Run ID:	LC_040806A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte		Result											
Fluoride		0.4512	0.1	0.5	0	0	90.2	90	110	0			
Chloride		4.778	0.1	5	0	0	95.6	90	110	0			
Nitrogen, Nitrite (As N)		0.921	0.1	1	0	0	92.1	90	110	0			
Bromide		2.367	0.1	2.5	0	0	94.7	90	110	0			
Nitrogen, Nitrate (As N)		2.365	0.1	2.5	0	0	94.6	90	110	0			
Phosphorus, Orthophosphate (As P)		4.526	0.5	5	0	0	90.5	90	110	0			
Sulfate		9.66	0.5	10	0	0	96.6	90	110	0			

Sample ID	LCS	Batch ID: R12709	Test Code: E300	Units: mg/L	Analysis Date	8/6/2004 9:06:19 PM	Prep Date					
Client ID:		Run ID:	LC_040806A		SeqNo:	295129						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		0.4494	0.1	0.5	0	89.9	90	110	0			S
Chloride		4.701	0.1	5	0	94.0	90	110	0			
Nitrogen, Nitrite (As N)		0.9531	0.1	1	0	95.3	90	110	0			
Bromide		2.317	0.1	2.5	0	92.7	90	110	0			
Nitrogen, Nitrate (As N)		2.344	0.1	2.5	0	93.8	90	110	0			
Phosphorus, Orthophosphate (As P)		4.56	0.5	5	0	91.2	90	110	0			
Sulfate		9.639	0.5	10	0	96.4	90	110	0			

Sample ID	LCS-6258	Batch ID: 6258	Test Code: E504.1	Units: µg/L	Analysis Date	8/6/2004 10:08:52 AM	Prep Date	8/6/2004				
Client ID:		Run ID: ECD(14A)_040806A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte		Result										
1,2-Dibromoethane		0.077	0.01	0.1	0	77.0	70	130	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

B - Analyte detected in the associated Method Blank

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: Giant Refining Co
Work Order: 0408039
Project: Boundary Well Initial Sampling

Sample ID	LCSD-6258	Batch ID	6258	Test Code	E504.1	Units	µg/L	Analysis Date	8/6/2004 10:21:49 AM	Prep Date	8/6/2004
Client ID:		Run ID:		PQL	ECD(14A)_040806A	SPK value		SeqNo:	294279		
Analyte		Result		PQL		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val
1,2-Dibromoethane		0.072		0.01		0.1	0	72.0	70	130	0.077
											6.71
											13.5

Sample ID	LCS-6289	Batch ID	6289	Test Code	SW8015	Units	mg/L	Analysis Date	8/14/2004 9:18:56 PM	Prep Date	8/11/2004
Client ID:		Run ID:		PQL	FID(17A)_2_040813A	SPK value		SeqNo:	296867		
Analyte		Result		PQL		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val
Diesel Range Organics (DRO)		6.735		1		5	0	135	81.2	149	0

Sample ID	LCSD-6289	Batch ID	6289	Test Code	SW8015	Units	mg/L	Analysis Date	8/14/2004 9:49:25 PM	Prep Date	8/11/2004
Client ID:		Run ID:		PQL	FID(17A)_2_040813A	SPK value		SeqNo:	296868		
Analyte		Result		PQL		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val
Diesel Range Organics (DRO)		6.697		1		5	0	134	81.2	149	6.735
											0.560
											23

Sample ID	GRO std 2.5ug	Batch ID	R12756	Test Code	SW8015	Units	mg/L	Analysis Date	8/12/2004 7:14:06 PM	Prep Date	
Client ID:		Run ID:		PQL	PIDFID_040812A	SPK value		SeqNo:	296308		
Analyte		Result		PQL		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val
Gasoline Range Organics (GRO)		0.4878		0.05		0.5	0	97.6	80.3	116	0

Sample ID	LCS-6260	Batch ID	6260	Test Code	SW8080A	Units	µg/L	Analysis Date	8/24/2004 3:05:02 AM	Prep Date	8/6/2004
Client ID:		Run ID:		PQL	ECD(17A)_040822A	SPK value		SeqNo:	298796		
Analyte		Result		PQL		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val
Aroclor 1016		7.096		1		10	0	71.0	27.4	132	0
Aroclor 1260		10.68		1		10	0	107	52.1	148	0

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: Giant Refining Co

Work Order: 0408039

Project: Boundary Well Initial Sampling

Sample ID	LCSD-6260	Batch ID: 6260	Test Code: SW8080A	Units: µg/L	Analysis Date 8/24/2004 4:37:48 AM	Prep Date 8/6/2004					
Client ID:			Run ID: ECD(17A)_040822A		SeqNo: 298801						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	7.658	1	10	0	76.6	27.4	132	7.096	7.62	45.7	
Aroclor 1260	11.08	1	10	0	111	52.1	148	10.68	3.64	30	

Sample ID	100ng lcs	Batch ID: R12713	Test Code: SW8260B	Units: µg/L	Analysis Date	8/9/2004	Prep Date				
Client ID:			Run ID: VAL_040809A		SeqNo:	295201					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	23.45	1	20	0	117	75.3	128	0			
Toluene	21.53	1	20	0	108	87.7	122	0			
Chlorobenzene	19.71	1	20	0	98.6	76.2	130	0			
1,1-Dichloroethene	19.25	1	20	0	96.3	70.7	122	0			
Trichloroethene (TCE)	20.92	1	20	0	105	76.9	130	0			

Sample ID	LCS-6271	Batch ID: 6271	Test Code: SW8270A	Units: µg/L	Analysis Date 8/23/2004	Prep Date 8/9/2004					
Client ID:			Run ID: ELMO_040823A		SeqNo: 298841						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	55.98	10	100	0	56.0	44.8	96.8	0			
4-Chloro-3-methylphenol	118.3	20	200	0	59.1	51.5	98.7	0			
2-Chlorophenol	117.1	10	200	0	58.6	45.9	99.6	0			
1,4-Dichlorobenzene	48.88	10	100	0	48.9	33	95.9	0			
2,4-Dinitrotoluene	69.78	10	100	0	69.8	47.8	103	0			
N-Nitrosodi-n-propylamine	58.3	10	100	0	58.3	45.9	93.6	0			
4-Nitrophenol	66.26	50	200	0	33.1	22.1	58.3	0			
Pentachlorophenol	99.54	50	200	0	49.8	26.4	118	0			
Phenol	75.04	10	200	0	37.5	6.99	71.3	0			
Pyrene	63.98	15	100	0	64.0	58.3	103	0			
1,2,4-Trichlorobenzene	46.32	10	100	0	46.3	38.7	92.3	0			

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: Giant Refining Co

Work Order: 0408039

Project: Boundry Well Initial Sampling

Sample ID	LCSD-6271	Batch ID: 6271	Test Code: SW8270A	Units: µg/L	Analysis Date 8/23/2004		Prep Date 8/9/2004						
Client ID:	Run ID:	ELMO_040823A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	SeqNo: 298842	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result												
Acenaphthene	56.48	10	100	0		56.5	44.8	96.8		55.98	0.889	30.5	
4-Chloro-3-methylphenol	122.7	20	200	0		61.3	51.5	98.7		118.3	3.64	28.6	
2-Chlorophenol	113.3	10	200	0		56.6	45.9	99.6		117.1	3.33	107	
1,4-Dichlorobenzene	54.74	10	100	0		54.7	33	95.9		48.88	11.3	62.1	
2,4-Dinitrotoluene	66.26	10	100	0		66.3	47.8	103		69.78	5.17	14.7	
N-Nitrosodi-n-propylamine	55.84	10	100	0		55.8	45.9	93.6		58.3	4.31	30.3	
4-Nitrophenol	73.66	50	200	0		36.8	22.1	58.3		66.26	10.6	36.3	
Pentachlorophenol	117	50	200	0		58.5	26.4	118		99.54	16.2	49	
Phenol	69.96	10	200	0		35.0	6.99	71.3		75.04	7.01	52.4	
Pyrene	64.58	15	100	0		64.6	58.3	103		63.98	0.933	16.3	
1,2,4-Trichlorobenzene	51.06	10	100	0		51.1	38.7	92.3		46.32	9.74	36.4	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Giant Refining Co
 Work Order: 0408039
 Project: Boundary Well Initial Sampling

Sample ID	LCS-6265	Batch ID: 6265	Test Code: SW8310	Units: µg/L	Analysis Date	8/21/2004 11:00:01 AM	Prep Date	8/9/2004			
Client ID:			Run ID: HUGO_040820A		SeqNo: 298504						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	27.64	2.5	40	0	69.1	20.939	111.211	0			
1-Methylnaphthalene	28.12	2.5	40.1	0	70.1	22.016	110.385	0			
2-Methylnaphthalene	27.2	2.5	40	0	68.0	21.098	111.261	0			
Acenaphthylene	28.18	2.5	40.1	0	70.3	23.852	116.857	0			
Acenaphthene	28.22	2.5	40	0	70.6	27.524	111.73	0			
Fluorene	2.71	0.8	4.01	0	67.6	31.046	113.32	0			
Phenanthrene	1.51	0.6	2.01	0	75.1	42.279	115.749	0			
Anthracene	1.51	0.6	2.01	0	75.1	43.767	118.693	0			
Fluoranthene	3.25	0.3	4.01	0	81.0	55.334	117.461	0			
Pyrene	3.18	0.3	4.01	0	79.3	57.722	120.832	0			
Benz(a)anthracene	0.32	0.02	0.401	0	79.8	70.18	113.452	0			
Chrysene	1.57	0.2	2.01	0	78.1	43.942	141.404	0			
Benzo(b)fluoranthene	0.3	0.05	0.38	0	78.9	71.192	103.368	0			
Benzo(k)fluoranthene	0.21	0.02	0.25	0	84.0	75.336	107.209	0			
Benzo(a)pyrene	0.2	0.02	0.251	0	79.7	74.556	100.742	0			
Dibenz(a,h)anthracene	0.41	0.04	0.501	0	81.8	80.693	106.931	0			
Benzo(g,h,i)perylene	0.44	0.03	0.5	0	88.0	55.168	135.014	0			
Indeno(1,2,3-cd)pyrene	0.848	0.08	1.002	0	84.6	79.328	104.794	0			

Sample ID	LCS-6267	Batch ID: 6267	Test Code: SW7470	Units: mg/L	Analysis Date	8/9/2004	Prep Date	8/9/2004			
Client ID:			Run ID: MI-LA254_040809A		SeqNo:	295022					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004961	0.0002	0.005	0	99.2	75.2	134	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: Giant Refining Co

Work Order: 0408039

Project: Boundry Well Initial Sampling

Sample ID	LCSD-6267	Batch ID:	6267	Test Code:	SW7470	Units:	mg/L	Analysis Date	8/9/2004	Prep Date	8/9/2004			
Client ID:		Run ID:	MI-LA254_040809A					SeqNo:	295037					
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00507		0.0002	0.005	0		101	75.2	134	0.004961	2.19	0	

Sample ID	LCS	Batch ID: R12692	Test Code: SW6010A	Units: mg/L	Analysis Date 8/6/2004 8:38:30 AM				Prep Date		
Client ID:		Run ID: ICP_040806A			SeqNo: 294295						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5066	0.02	0.5	0	101	80	120	0			
Barium	0.4724	0.002	0.5	0	94.5	80	120	0			
Cadmium	0.4991	0.002	0.5	0	99.8	80	120	0			
Calcium	49.52	1	50.5	0.03671	98.0	80	120	0			
Chromium	0.4786	0.006	0.5	0	95.7	80	120	0			
Lead	0.4877	0.005	0.5	0	97.5	80	120	0			
Magnesium	51.42	1	50.5	0.03883	102	80	120	0			
Potassium	52.69	1	55	0	95.8	80	120	0			
Selenium	0.5447	0.05	0.5	0	109	80	120	0			
Silver	0.4788	0.005	0.5	0	95.8	80	120	0			
Sodium	48.73	1	50.5	0.04847	96.4	80	120	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: Giant Refining Co

Work Order: 0408039

Project: Boundary Well Initial Sampling

Sample ID	LCSD	Batch ID: R12692	Test Code: SW6010A	Units: mg/L	Analysis Date 8/6/2004 8:41:30 AM	Prep Date					
Client ID:		Run ID: ICP_040806A	SeqNo: 294296								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5037	0.02	0.5	0	101	80	120	0.5066	0.564	20	
Barium	0.4822	0.002	0.5	0	96.4	80	120	0.4724	2.06	20	
Cadmium	0.5077	0.002	0.5	0	102	80	120	0.4991	1.70	20	
Calcium	49.92	1	50.5	0.03671	98.8	80	120	49.52	0.800	20	
Chromium	0.4859	0.006	0.5	0	97.2	80	120	0.4786	1.51	20	
Lead	0.4945	0.005	0.5	0	98.9	80	120	0.4877	1.39	20	
Magnesium	51.84	1	50.5	0.03883	103	80	120	51.42	0.811	20	
Potassium	53.08	1	55	0	96.5	80	120	52.69	0.734	20	
Selenium	0.5452	0.05	0.5	0	109	80	120	0.5447	0.0927	20	
Silver	0.4917	0.005	0.5	0	98.3	80	120	0.4788	2.67	20	
Sodium	49.13	1	50.5	0.04847	97.2	80	120	48.73	0.825	20	

Sample ID	LCS U	Batch ID: R12692	Test Code: SW6010A	Units: mg/L	Analysis Date 8/6/2004 10:58:34 AM	Prep Date					
Client ID:		Run ID: ICP_040806A	SeqNo: 294330								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	5.11	0.1	5	0	102	80	120	0			

Sample ID	LCSD U	Batch ID: R12692	Test Code: SW6010A	Units: mg/L	Analysis Date 8/6/2004 11:01:27 AM	Prep Date					
Client ID:		Run ID: ICP_040806A	SeqNo: 294331								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium	5.131	0.1	5	0	103	80	120	5.11	0.414	20	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Giant Refining Co
 Work Order: 0408039
 Project: Boundry Well Initial Sampling

Sample ID	LCS-6279	Batch ID: 6279	Test Code: E160.1	Units: mg/L	Analysis Date	8/10/2004	Prep Date	8/10/2004
Client ID:		Run ID:	WC_040810C		SeqNo:	296936		
Analyte		Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val
Total Dissolved Solids		1009	50	1000	0	101	80	120
								0

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received:

Work Order Number 0408039

Received by AMG

Checklist completed by

Bonzales 08/05/04
Signature Date

Matrix

Carrier name Client drop-off

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 - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

4°

4° C ± 2 Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding

Comments:

Corrective Action

CHAIN-OF-CUSTODY RECORD

Client:

Giant - Civiza Refinery

Project Name:

Bowery Well
Initial Sampling

Address:

Route 3 Box 7

Project #:

Calhoun, NM 87301

Project Manager:

Steve Morris

Phone #:

505 722 3833

Sampler:

Steve Morris

Fax #:

505 722 0210

Samples Cold?

☐ Yes

☐ No

40

Date

Time

Matrix

Sample I.D. No.

Number/Volume

Preservative
H₂O₂ HCl

HEAL No.

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gasoline Only)

TPH Method 8015B MOD (Gas/Diesel)

TPH (Method 418.1) (± 0.1%)

Volatiles Full List (8021)

EDB (Method 504.1)

EDC (Method 8021)

8310 (PNA or PAH)

RCRA 8 Metals

Cations (Na, K, Ca, Mg)

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / PCB's (8082)

8260 (VOA)

8270 (Semi-VOA)

general H₂O chemistry
WQCC heavy metals
standards

Air Bubbles or Headspace (Y or N)

ANALYSIS REQUEST



HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite A
Albuquerque, New Mexico 87109
Tel. 505.345.3875 Fax 505.345.4107
www.hallenvironmental.com

see attached

anion/cation ratios

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative H ₂ O ₂ HCl	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B MOD (Gas/Diesel)	TPH (Method 418.1) (± 0.1%)	Volatiles Full List (8021)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / PCB's (8082)	8260 (VOA)	8270 (Semi-VOA)	general H ₂ O chemistry WQCC heavy metals standards	Air Bubbles or Headspace (Y or N)
8/4/04	0900	H ₂ O	BW-3-C	14			048039															
"	0930	"	BW-3-B	"																		
"	1030	"	BW-2-C	"																		
"	1130	"	BW-2-A	"																		
"	1230	"	BW-2-B	"																		
"	1330	"	BW-1-C	"																		
			7B																			

Remarks:

groundwater should be clean
no organics NOTIFY IMMEDIATELY
IF ANY detected

Date:

Time:

Relinquished By: (Signature)
8/5/04 1015

Received By: (Signature)
8/5/04 1015

Relinquished By: (Signature)

Received By: (Signature)

COVER LETTER

November 04, 2004

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 722-0210

RE: Boundry Well October 2004

Order No.: 0410281

Dear Steve Morris:

Hall Environmental Analysis Laboratory received 2 samples on 10/29/2004 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



Hall Environmental Analysis Laboratory

Date: 04-Nov-04

CLIENT: Giant Refining Co

Client Sample ID: BW-2C

Lab Order: 0410281

Collection Date: 10/28/2004 9:30:00 AM

Project: Boundry Well October 2004

Lab ID: 0410281-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Acetone	ND	10		µg/L	1	11/3/2004
Surr: 1,2-Dichloroethane-d4	97.3	70.6-124		%REC	1	11/3/2004
Surr: 4-Bromofluorobenzene	91.8	76.4-130		%REC	1	11/3/2004
Surr: Dibromofluoromethane	91.3	67.2-131		%REC	1	11/3/2004
Surr: Toluene-d8	101	82.1-123		%REC	1	11/3/2004

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

Hall Environmental Analysis Laboratory

Date: 04-Nov-04

CLIENT: Giant Refining Co
Lab Order: 0410281
Project: Boundry Well October 2004
Lab ID: 0410281-02

Client Sample ID: BW-3C
Collection Date: 10/28/2004 2:00:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: KTM
Benzene	ND	1.0		µg/L	1	11/3/2004
Toluene	ND	1.0		µg/L	1	11/3/2004
Xylenes, Total	ND	1.0		µg/L	1	11/3/2004
Surr: 1,2-Dichloroethane-d4	99.9	82.1-124		%REC	1	11/3/2004
Surr: 4-Bromofluorobenzene	95.6	76.2-122		%REC	1	11/3/2004
Surr: Dibromofluoromethane	92.6	67.2-131		%REC	1	11/3/2004
Surr: Toluene-d8	107	82.1-123		%REC	1	11/3/2004

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level 2 / 8

Hall Environmental Analysis Laboratory

Date: 04-Nov-04

CLIENT: Giant Refining Co
Work Order: 0410281
Project: Boundary Well October 2004

QC SUMMARY REPORT

Method Blank

Sample ID	5mL rb	Batch ID: R13663	Test Code: SW8260B	Units: µg/L	Analysis Date 11/3/2004	Prep Date					
Client ID:		Run ID: NEPTUNE_041103A			SeqNo: 317478						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									J
Toluene	0.464	1									
Xylenes, Total	ND	1									
Surr: 1,2-Dichloroethane-d4	9.97	0	10	0	99.7	82.1	124	0			
Surr: 4-Bromofluorobenzene	9.564	0	10	0	95.6	76.2	122	0			
Surr: Dibromofluoromethane	9.33	0	10	0	93.3	67.2	131	0			
Surr: Toluene-d8	11	0	10	0	110	82.1	123	0			

3 / 8

Sample ID	5mL rb	Batch ID: R13647	Test Code: SW8260B	Units: µg/L	Analysis Date 11/2/2004	Prep Date					
Client ID:		Run ID: NEPTUNE_041102A			SeqNo: 317020						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acetone	ND	10									
Surr: 1,2-Dichloroethane-d4	9.534	0	10	0	95.3	68.4	127	0			
Surr: 4-Bromofluorobenzene	9.416	0	10	0	94.2	70.4	126	0			
Surr: Dibromofluoromethane	8.858	0	10	0	88.6	70.2	126	0			
Surr: Toluene-d8	10.45	0	10	0	104	73.5	129	0			

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
 Work Order: 0410281
 Project: Boundry Well October 2004

Sample ID	5mL rb	Batch ID: R13663	Test Code: SW8260B	Units: µg/L	Analysis Date	11/3/2004	Prep Date				
Client ID:			Run ID:	NEPTUNE_041103A	SeqNo:	317437					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Toluene	ND	1									
Ethylbenzene	ND	1									
Methyl tert-butyl ether (MTBE)	ND	1									
1,2,4-Trimethylbenzene	ND	1									
1,3,5-Trimethylbenzene	ND	1									
1,2-Dichloroethane (EDC)	ND	1									
1,2-Dibromoethane (EDB)	ND	1									
Naphthalene	ND	2									
1-Methylnaphthalene	ND	4									
2-Methylnaphthalene	ND	4									
Acetone	ND	10									
Bromobenzene	ND	1									
Bromochloromethane	ND	1									
Bromodichloromethane	ND	1									
Bromoform	ND	1									
Bromomethane	ND	2									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1									
Chlorobenzene	ND	1									
Chloroethane	ND	2									
Chloroform	ND	1									
Chloromethane	ND	1									
2-Chlorotoluene	ND	1									
4-Chlorotoluene	ND	1									
cis-1,2-DCE	ND	1									
cis-1,3-Dichloropropene	ND	1									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co

Work Order: 0410281

Project: Boundry Well October 2004

1,2-Dibromo-3-chloropropane	ND	2
Dibromochloromethane	ND	1
Dibromomethane	ND	2
1,2-Dichlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
Dichlorodifluoromethane	ND	1
1,1-Dichloroethane	ND	1
1,1-Dichloroethene	ND	1
1,2-Dichloropropane	ND	1
1,3-Dichloropropane	ND	1
2,2-Dichloropropane	ND	1
1,1-Dichloropropene	ND	1
Hexachlorobutadiene	ND	1
2-Hexanone	ND	10
Isopropylbenzene	ND	1
4-Isopropyltoluene	ND	1
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3
n-Butylbenzene	ND	1
n-Propylbenzene	ND	1
sec-Butylbenzene	ND	1
Styrene	ND	1
tert-Butylbenzene	ND	1
1,1,1,2-Tetrachloroethane	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Tetrachloroethene (PCE)	ND	1
trans-1,2-DCE	ND	1
trans-1,3-Dichloropropene	ND	1
1,2,3-Trichlorobenzene	ND	1
1,2,4-Trichlorobenzene	ND	1
1,1,1-Trichloroethane	ND	1
1,1,2-Trichloroethane	ND	1

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 04-Nov-04

CLIENT: Giant Refining Co

Work Order: 0410281

Project: Boundary Well October 2004

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	100ng Ics	Batch ID: R13663	Test Code: SW8260B	Units: µg/L	Analysis Date 11/3/2004	Prep Date					
Client ID:		Run ID: NEPTUNE_041103A		SeqNo: 317483							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.91	1	20	0	99.6	80.4	120	0			
Toluene	20.13	1	20	0.464	98.3	82.5	120	0			

Sample ID	100ng Ics	Batch ID: R13663	Test Code: SW8260B	Units: µg/L	Analysis Date 11/3/2004	Prep Date					
Client ID:		Run ID: NEPTUNE_041103A		SeqNo: 317438							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.91	1	20	0	99.6	75.3	128	0			
Toluene	20.13	1	20	0	101	77.8	122	0			
Chlorobenzene	20.32	1	20	0	102	76.2	130	0			
1,1,1-Dichloroethene	17.87	1	20	0	89.4	70.2	119	0			
Trichloroethene (TCE)	19.27	1	20	0	96.4	76.9	130	0			

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received:

Work Order Number 0410281

Received by AT

Checklist completed by Abonjalis 10/29/04
Signature Date

Matrix

Carrier name Client drop-off

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 - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒	
Container/Temp Blank temperature?	9°	4° C ± 2 Acceptable		If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Address:	Project #:
Rt. 327	7

	Project Manager:	Steve Morris

Fax #:	505 722 0210	Samples Cold? ☒ Yes ☐ No
	122-533	<i>Cheng-Ming</i>

HC ₂ H ₃	HCl	HC ₂ H ₃	HCl
041028			

--	--	--	--	--	--

[illegible]

--	--	--	--	--	--	--

[illegible]

[illegible][illegible]

Date: _____
Time: _____
Reinquired By: (Signature) _____
Received By: (Signature) _____ 0900

[illegible]

Remarks: BW-3C per Sm add Toluenes Xylene
11/2/04 HT

COVER LETTER

December 27, 2004

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 722-0210

RE: Ciniza Water Well #2

Order No.: 0412107

Dear Steve Morris:

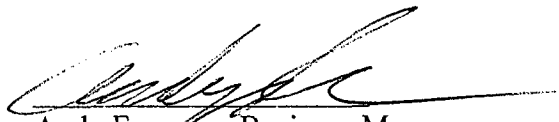
Hall Environmental Analysis Laboratory received 1 sample on 12/10/2004 for the analyses presented in the following report.

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



Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412107
Project: Ciniza Water Well #2
Lab ID: 0412107-01

Client Sample ID: Water Well #2
Collection Date: 12/9/2004 3:00:00 PM

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.18	0.10		mg/L	1	12/10/2004 2:42:19 PM
Chloride	16	0.10		mg/L	1	12/10/2004 2:42:19 PM
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	12/10/2004 2:42:19 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	12/10/2004 2:42:19 PM
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	12/10/2004 2:42:19 PM
Sulfate	170	2.5		mg/L	5	12/10/2004 7:44:51 PM
EPA METHOD 504.1: EDB						Analyst: BL
1,2-Dibromoethane	ND	0.010		µg/L	1	12/15/2004 2:44:10 PM
EPA METHOD 8082: PCB'S						Analyst: JMP
Aroclor 1016	ND	0.50		µg/L	1	12/17/2004 7:30:14 AM
Aroclor 1221	ND	0.50		µg/L	1	12/17/2004 7:30:14 AM
Aroclor 1232	ND	0.50		µg/L	1	12/17/2004 7:30:14 AM
Aroclor 1242	ND	0.50		µg/L	1	12/17/2004 7:30:14 AM
Aroclor 1248	ND	0.50		µg/L	1	12/17/2004 7:30:14 AM
Aroclor 1254	ND	0.50		µg/L	1	12/17/2004 7:30:14 AM
Aroclor 1260	ND	0.50		µg/L	1	12/17/2004 7:30:14 AM
Surr: Decachlorobiphenyl	99.6	44.7-178		%REC	1	12/17/2004 7:30:14 AM
Surr: Tetrachloro-m-xylene	85.2	32.3-131		%REC	1	12/17/2004 7:30:14 AM
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	1.0		µg/L	1	12/13/2004
Toluene	ND	1.0		µg/L	1	12/13/2004
Ethylbenzene	ND	1.0		µg/L	1	12/13/2004
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	12/13/2004
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	12/13/2004
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	12/13/2004
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	12/13/2004
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	12/13/2004
Naphthalene	ND	2.0		µg/L	1	12/13/2004
1-Methylnaphthalene	ND	4.0		µg/L	1	12/13/2004
2-Methylnaphthalene	ND	4.0		µg/L	1	12/13/2004
Acetone	ND	10		µg/L	1	12/13/2004
Bromobenzene	ND	1.0		µg/L	1	12/13/2004
Bromochloromethane	ND	1.0		µg/L	1	12/13/2004
Bromodichloromethane	ND	1.0		µg/L	1	12/13/2004
Bromoform	ND	1.0		µg/L	1	12/13/2004
Bromomethane	ND	2.0		µg/L	1	12/13/2004
2-Butanone	ND	10		µg/L	1	12/13/2004
Carbon disulfide	ND	10		µg/L	1	12/13/2004
Carbon Tetrachloride	ND	1.0		µg/L	1	12/13/2004

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

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412107
Project: Ciniza Water Well #2
Lab ID: 0412107-01

Client Sample ID: Water Well #2
Collection Date: 12/9/2004 3:00:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Chlorobenzene	ND	1.0		µg/L	1	12/13/2004
Chloroethane	ND	2.0		µg/L	1	12/13/2004
Chloroform	ND	1.0		µg/L	1	12/13/2004
Chloromethane	ND	1.0		µg/L	1	12/13/2004
2-Chlorotoluene	ND	1.0		µg/L	1	12/13/2004
4-Chlorotoluene	ND	1.0		µg/L	1	12/13/2004
cis-1,2-DCE	ND	1.0		µg/L	1	12/13/2004
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	12/13/2004
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	12/13/2004
Dibromochloromethane	ND	1.0		µg/L	1	12/13/2004
Dibromomethane	ND	2.0		µg/L	1	12/13/2004
1,2-Dichlorobenzene	ND	1.0		µg/L	1	12/13/2004
1,3-Dichlorobenzene	ND	1.0		µg/L	1	12/13/2004
1,4-Dichlorobenzene	ND	1.0		µg/L	1	12/13/2004
Dichlorodifluoromethane	ND	1.0		µg/L	1	12/13/2004
1,1-Dichloroethane	ND	1.0		µg/L	1	12/13/2004
1,1-Dichloroethene	ND	1.0		µg/L	1	12/13/2004
1,2-Dichloropropane	ND	1.0		µg/L	1	12/13/2004
1,3-Dichloropropane	ND	1.0		µg/L	1	12/13/2004
2,2-Dichloropropane	ND	1.0		µg/L	1	12/13/2004
1,1-Dichloropropene	ND	1.0		µg/L	1	12/13/2004
Hexachlorobutadiene	ND	1.0		µg/L	1	12/13/2004
2-Hexanone	ND	10		µg/L	1	12/13/2004
Isopropylbenzene	ND	1.0		µg/L	1	12/13/2004
4-Isopropyltoluene	ND	1.0		µg/L	1	12/13/2004
4-Methyl-2-pentanone	ND	10		µg/L	1	12/13/2004
Methylene Chloride	ND	3.0		µg/L	1	12/13/2004
n-Butylbenzene	ND	1.0		µg/L	1	12/13/2004
n-Propylbenzene	ND	1.0		µg/L	1	12/13/2004
sec-Butylbenzene	ND	1.0		µg/L	1	12/13/2004
Styrene	ND	1.0		µg/L	1	12/13/2004
tert-Butylbenzene	ND	1.0		µg/L	1	12/13/2004
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	12/13/2004
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	12/13/2004
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	12/13/2004
trans-1,2-DCE	ND	1.0		µg/L	1	12/13/2004
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	12/13/2004
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	12/13/2004
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	12/13/2004
1,1,1-Trichloroethane	ND	1.0		µg/L	1	12/13/2004
1,1,2-Trichloroethane	ND	1.0		µg/L	1	12/13/2004
Trichloroethene (TCE)	ND	1.0		µg/L	1	12/13/2004

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

Ans, Inc 888-546-0509

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0412107
Project: Ciniza Water Well #2
Lab ID: 0412107-01

Client Sample ID: Water Well #2
Collection Date: 12/9/2004 3:00:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Trichlorofluoromethane	ND	1.0		µg/L	1	12/13/2004
1,2,3-Trichloropropane	ND	2.0		µg/L	1	12/13/2004
Vinyl chloride	ND	1.0		µg/L	1	12/13/2004
Xylenes, Total	5.0	1.0		µg/L	1	12/13/2004
Surr: 1,2-Dichloroethane-d4	105	74.7-113		%REC	1	12/13/2004
Surr: 4-Bromofluorobenzene	108	86.1-120		%REC	1	12/13/2004
Surr: Dibromofluoromethane	103	93.1-112		%REC	1	12/13/2004
Surr: Toluene-d8	101	83.1-112		%REC	1	12/13/2004

EPA METHOD 8310: PAHS

Analyst: BL

Naphthalene	ND	2.5		µg/L	1	12/16/2004 11:00:14 PM
1-Methylnaphthalene	ND	2.5		µg/L	1	12/16/2004 11:00:14 PM
2-Methylnaphthalene	ND	2.5		µg/L	1	12/16/2004 11:00:14 PM
Acenaphthylene	ND	2.5		µg/L	1	12/16/2004 11:00:14 PM
Acenaphthene	ND	2.5		µg/L	1	12/16/2004 11:00:14 PM
Fluorene	ND	0.80		µg/L	1	12/16/2004 11:00:14 PM
Phenanthrene	1.4	0.60		µg/L	1	12/16/2004 11:00:14 PM
Anthracene	ND	0.60		µg/L	1	12/16/2004 11:00:14 PM
Fluoranthene	ND	0.30		µg/L	1	12/16/2004 11:00:14 PM
Pyrene	ND	0.30		µg/L	1	12/16/2004 11:00:14 PM
Benz(a)anthracene	ND	0.020		µg/L	1	12/16/2004 11:00:14 PM
Chrysene	ND	0.20		µg/L	1	12/16/2004 11:00:14 PM
Benzo(b)fluoranthene	ND	0.050		µg/L	1	12/16/2004 11:00:14 PM
Benzo(k)fluoranthene	ND	0.020		µg/L	1	12/16/2004 11:00:14 PM
Benzo(a)pyrene	ND	0.020		µg/L	1	12/16/2004 11:00:14 PM
Dibenz(a,h)anthracene	ND	0.040		µg/L	1	12/16/2004 11:00:14 PM
Benzo(g,h,i)perylene	ND	0.030		µg/L	1	12/16/2004 11:00:14 PM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	12/16/2004 11:00:14 PM
Surr: Benzo(e)pyrene	84.8	54-102		%REC	1	12/16/2004 11:00:14 PM

EPA METHOD 7470: MERCURY

Analyst: CMC

Mercury	ND	0.00020		mg/L	1	12/21/2004
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EPA METHOD 6010C: DISSOLVED METALS

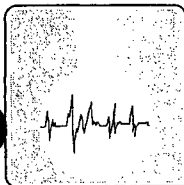
Analyst: NMO

Arsenic	ND	0.020		mg/L	1	12/17/2004 9:30:45 AM
Barium	0.020	0.0020		mg/L	1	12/17/2004 9:30:45 AM
Cadmium	ND	0.0020		mg/L	1	12/17/2004 9:30:45 AM
Chromium	ND	0.0060		mg/L	1	12/17/2004 9:30:45 AM
Lead	ND	0.0050		mg/L	1	12/17/2004 9:30:45 AM
Selenium	ND	0.050		mg/L	1	12/17/2004 9:30:45 AM
Silver	ND	0.0050		mg/L	1	12/17/2004 9:30:45 AM
Uranium	ND	0.10		mg/L	1	12/17/2004 9:30:45 AM
Vanadium	ND	0.050		mg/L	1	12/17/2004 9:30:45 AM
Zinc	0.013	0.0050		mg/L	1	12/17/2004 9:30:45 AM

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level



ASSAIGAI ANALYTICAL LABORATORIES, INC.

4301 Masthead NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259

3332 Wedgewood, Ste. N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820

127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

HALL ENVIRONMENTAL

attn: ANDY FREEMAN

4901 HAWKINS NE, SUITE D

ALBUQUERQUE

NM 87109-4372

Explanation of codes

B	analyte detected in Method Blank
E	result is estimated
H	analyzed out of hold time
N	tentatively identified compound
S	subcontracted
1-9	see footnote

Assaigai Analytical Laboratories, Inc.

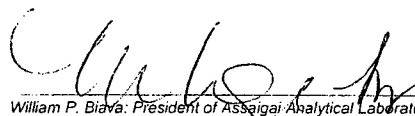
STANDARD

Certificate of Analysis

Client: HALL ENVIRONMENTAL

Project: CINIZA ANNUAL GW SAMP

Order: 0412262 HAL03 Receipt: 12-10-04


William P. Biava: President of Assaigai Analytical Laboratories, Inc.

Sample: WATER WELL #2

Collected: 12-09-04 15:00:00 By:

Matrix: AQUEOUS

SR1682

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0412262-01A		SM-9223B						By: MDE		
BT-04-245	BT.2004.962.1		E. coli, MMO/MUG	Absent	N/A	1	0		12-10-04	12-11-04
BT-04-245	BT.2004.962.1		Total Coliform, MMO/MUG	Absent	N/A	1	0		12-10-04	12-11-04

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or footnotes will appear below.

Analytical results are not corrected for method blank or field blank contamination.

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co
Work Order: 0412107
Project: Ciniza Water Well #2

QC SUMMARY REPORT

Method Blank

Sample ID	MBLK	Batch ID: R14012	Test Code: E300	Units: mg/L	Analysis Date	12/10/2004 12:11:13 P	Prep Date				
Client ID:		Run ID:	LC_041210A		SeqNo:	325811					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									

Sample ID	MBLK	Batch ID: R14012	Test Code: E300	Units: mg/L	Analysis Date	12/10/2004 6:54:25 PM	Prep Date				
Client ID:		Run ID:	LC_041210A		SeqNo:	325835					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	ND	0.1									
Chloride	ND	0.1									
Nitrogen, Nitrite (As N)	ND	0.1									
Nitrogen, Nitrate (As N)	ND	0.1									
Phosphorus, Orthophosphate (As P)	ND	0.5									
Sulfate	ND	0.5									

Sample ID	MB-7070	Batch ID: 7070	Test Code: E504.1	Units: µg/L	Analysis Date	12/15/2004 1:30:47 PM	Prep Date	12/15/2004			
Client ID:			Run ID: ECD(14A)_041215A		SeqNo: 326579						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.01									

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

1

CLIENT: Giant Refining Co
Work Order: 0412107
Project: Ciniza Water Well #2

QC SUMMARY REPORT
 Method Blank

Sample ID	MB-7063	Batch ID: 7063	Test Code: SW8080A	Units: µg/L	Analysis Date	12/17/2004 3:40:34 AM	Prep Date	12/14/2004				
Client ID:			Run ID:	ECD(17A)_041216A	SeqNo:	326996						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016		ND	1									
Aroclor 1221		ND	5									
Aroclor 1232		ND	1									
Aroclor 1242		ND	1									
Aroclor 1248		ND	1									
Aroclor 1254		ND	1									
Aroclor 1260		ND	1									
Surr: Decachlorobiphenyl		2.3	0	2.5	0	92.0	45.3	140	0			
Surr: Tetrachloro-m-xylene		2.03	0	2.5	0	81.2	28.1	139	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
Work Order: 0412107
Project: Ciniza Water Well #2

Sample ID	MB-7055	Batch ID	7055	Test Code	SW8310	Units	µg/L	Analysis Date	12/16/2004 1:24:11 PM	Prep Date	12/13/2004
Client ID:		Run ID:	HUGO_041216A	SeqNo:	326781						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	2.5									
1-Methylnaphthalene	ND	2.5									
2-Methylnaphthalene	ND	2.5									
Acenaphthylene	ND	2.5									
Acenaphthene	ND	2.5									
Fluorene	ND	0.8									
Phenanthrene	ND	0.6									
Anthracene	ND	0.6									
Fluoranthene	ND	0.3									
Pyrene	ND	0.3									
Benz(a)anthracene	ND	0.02									
Chrysene	ND	0.2									
Benzo(b)fluoranthene	ND	0.05									
Benzo(k)fluoranthene	ND	0.02									
Benzo(a)pyrene	ND	0.02									
Dibenz(a,h)anthracene	ND	0.04									
Benzo(g,h,i)perylene	ND	0.03									
Indeno(1,2,3-cd)pyrene	ND	0.08									
Surr: Benzo(e)pyrene	9.54	0	10	0	95.4	54	102	0			

Sample ID	MB-7107	Batch ID	7107	Test Code	SW7470	Units	mg/L	Analysis Date	12/21/2004	Prep Date	12/21/2004
Client ID:		Run ID:	MI-LA254_041221B	SeqNo:	327858						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0412107
Project: Ciniza Water Well #2

QC SUMMARY REPORT
 Method Blank

Sample ID	MB	Batch ID: R14065	Test Code: SW6010A	Units: mg/L	Analysis Date	12/17/2004 8:07:09 AM	Prep Date				
Client ID:		Run ID: ICP_041217A			SeqNo:	326947					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02									
Barium	ND	0.002									
Cadmium	ND	0.002									
Chromium	ND	0.006									
Lead	ND	0.005									
Selenium	ND	0.05									
Silver	ND	0.005									
Uranium	ND	0.1									
Vanadium	ND	0.05									
Zinc	ND	0.005									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 23-Dec-04

CLIENT: Giant Refining Co

Work Order: 0412107

Project: Ciniza Water Well #2

QC SUMMARY REPORT

Method Blank

Sample ID	5mL rb	Batch ID: R14014	Test Code: SW8260B	Units: µg/L	Analysis Date	12/10/2004	Prep Date				
Client ID:		Run ID:	NEPTUNE_041210A		SeqNo:	325871					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Toluene	ND	1									
Ethylbenzene	ND	1									
Methyl tert-butyl ether (MTBE)	ND	1									
1,2,4-Trimethylbenzene	ND	1									
1,3,5-Trimethylbenzene	ND	1									
1,2-Dichloroethane (EDC)	ND	1									
1,2-Dibromoethane (EDB)	ND	1									
Naphthalene	ND	2									
1-Methylnaphthalene	ND	4									
2-Methylnaphthalene	ND	4									
Acetone	ND	10									
Bromobenzene	ND	1									
Bromochloromethane	ND	1									
Bromodichloromethane	ND	1									
Bromoform	ND	1									
Bromomethane	ND	2									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1									
Chlorobenzene	ND	1									
Chloroethane	ND	2									
Chloroform	ND	1									
Chloromethane	ND	1									
2-Chlorotoluene	ND	1									
4-Chlorotoluene	ND	1									
cis-1,2-DCE	ND	1									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co

Work Order: 0412107

Project: Ciniza Water Well #2

cis-1,3-Dichloropropene	ND	1
1,2-Dibromo-3-chloropropane	ND	2
Dibromochloromethane	ND	1
Dibromomethane	ND	2
1,2-Dichlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
Dichlorodifluoromethane	ND	1
1,1-Dichloroethane	ND	1
1,1-Dichloroethene	ND	1
1,2-Dichloropropane	ND	1
1,3-Dichloropropane	ND	1
2,2-Dichloropropane	ND	1
1,1-Dichloropropene	ND	1
Hexachlorobutadiene	ND	1
2-Hexanone	ND	10
Isopropylbenzene	ND	1
4-Isopropyltoluene	ND	1
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3
n-Butylbenzene	ND	1
n-Propylbenzene	ND	1
sec-Butylbenzene	ND	1
Styrene	ND	1
tert-Butylbenzene	ND	1
1,1,1,2-Tetrachloroethane	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Tetrachloroethene (PCE)	ND	1
trans-1,2-DCE	ND	1
trans-1,3-Dichloropropene	ND	1
1,2,3-Trichlorobenzene	ND	1
1,2,4-Trichlorobenzene	ND	1
1,1,1-Trichloroethane	ND	1

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Method Blank

CLIENT: Giant Refining Co

Work Order: 0412107

Project: Ciniza Water Well #2

1,1,1,2-Trichloroethane	1	ND																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 27-Dec-04

CLIENT: Giant Refining Co
Work Order: 0412107
Project: Ciniza Water Well #2

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: R14012	Test Code: E300	Units: mg/L	Analysis Date: 12/10/2004 12:27:58 P	Prep Date:
Client ID:	Run ID: LC_041210A	PQL	SPK value	SeqNo: 325812	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Fluoride	0.4732	0.1	0.5	0	94.6 90 110 0
Chloride	4.635	0.1	5	0	92.7 90 110 0
Nitrogen, Nitrite (As N)	0.9039	0.1	1	0	90.4 90 110 0
Nitrogen, Nitrate (As N)	2.362	0.1	2.5	0	94.5 90 110 0
Phosphorus, Orthophosphate (As P)	4.79	0.5	5	0	95.8 90 110 0
Sulfate	9.623	0.5	10	0	96.2 90 110 0

Sample ID: LCS-7070	Batch ID: 7070	Test Code: E504.1	Units: µg/L	Analysis Date: 12/15/2004 1:42:55 PM	Prep Date: 12/15/2004
Client ID:	Run ID: ECD(14A)_041215A	PQL	SPK value	SeqNo: 326580	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
1,2-Dibromoethane	0.127	0.01	0.1	0	127 70 130 0

Sample ID: LCS-7063	Batch ID: 7063	Test Code: SW8080A	Units: µg/L	Analysis Date: 12/17/2004 4:26:52 AM	Prep Date: 12/14/2004
Client ID:	Run ID: ECD(17A)_041216A	PQL	SPK value	SeqNo: 326998	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aroclor 1016	3.338	1	5	0	66.8 27.4 132 0

Sample ID: LCS-7063	Batch ID: 7063	Test Code: SW8080A	Units: µg/L	Analysis Date: 12/17/2004 5:13:10 AM	Prep Date: 12/14/2004
Client ID:	Run ID: ECD(17A)_041216A	PQL	SPK value	SeqNo: 327000	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Aroclor 1016	3.456	1	5	0	69.1 27.4 132 3.338 3.47 45.7

Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

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CLIENT: Giant Refining Co
Work Order: 0412107
Project: Ciniza Water Well #2

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID: 100ng lcs	Batch ID: R14014	Test Code: SW8260B	Units: µg/L	Analysis Date: 12/10/2004	Prep Date:						
Client ID:	Run ID: NEPTUNE_041210A	SeqNo: 325880									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	22.46	1	20	0	112	75.3	128	0			
Toluene	20.79	1	20	0	104	77.8	122	0			
Chlorobenzene	19.35	1	20	0	96.8	76.2	130	0			
1,1-Dichloroethene	21.57	1	20	0	108	70.2	119	0			
Trichloroethene (TCE)	20.35	1	20	0	102	76.9	130	0			

Sample ID: 100ng lcs	Batch ID: R14024	Test Code: SW8260B	Units: µg/L	Analysis Date: 12/13/2004	Prep Date:						
Client ID:	Run ID: VAL_041213A	SeqNo: 326070									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.61	1	20	0	103	75.3	128	0			
Toluene	20.33	1	20	0	102	77.8	122	0			
Chlorobenzene	19.48	1	20	0	97.4	76.2	130	0			
1,1-Dichloroethene	20	1	20	0	100	70.2	119	0			
Trichloroethene (TCE)	18.87	1	20	0	94.4	76.9	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Giant Refining Co
 Work Order: 0412107
 Project: Ciniza Water Well #2

Sample ID: LCS-7055	Batch ID: 7055	Test Code: SW8310	Units: µg/L	Analysis Date: 12/16/2004 2:12:12 PM	Prep Date: 12/13/2004
Client ID:	Run ID: HUGO_041216A	PQL	SPK value	SeqNo: 326783	
Analyte	Result	%REC	LowLimit	HighLimit	RPD Ref Val
Naphthalene	28.2	70.5	20.939	111.211	0
1-Methylnaphthalene	29.41	73.3	22.016	110.385	0
2-Methylnaphthalene	28.76	71.9	21.098	111.261	0
Acenaphthylene	29.2	72.8	23.852	116.857	0
Acenaphthene	29.96	74.9	27.524	111.73	0
Fluorene	3	74.8	31.046	113.32	0
Phenanthrene	1.68	83.6	42.279	115.749	0
Anthracene	1.67	83.1	43.767	118.693	0
Fluoranthene	3.55	88.5	55.334	117.461	0
Pyrene	3.5	87.3	57.722	120.832	0
Benz(a)anthracene	0.36	89.8	70.18	113.452	0
Chrysene	1.7	84.6	43.942	141.404	0
Benzo(b)fluoranthene	0.32	84.2	71.192	103.368	0
Benzo(k)fluoranthene	0.22	88.0	75.336	107.209	0
Benzo(a)pyrene	0.21	83.7	74.556	100.742	0
Dibenz(a,h)anthracene	0.48	95.8	80.693	106.931	0
Benzo(g,h,i)perylene	0.4	80.0	55.168	135.014	0
Indeno(1,2,3-cd)pyrene	0.989	98.7	79.328	104.794	0

Qualifiers: ND - Not Detected at the Reporting Limit
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 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: Giant Refining Co
 Work Order: 0412107
 Project: Ciniza Water Well #2

Sample ID: LCSD-7055	Batch ID: 7055	Test Code: SW8310	Units: µg/L	Analysis Date: 12/16/2004 3:00:11 PM	Prep Date: 12/13/2004						
Client ID:	Run ID:	HUGO_041216A	SeqNo:	326785							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	34.32	2.5	40	0	85.8	20.939	111.211	28.2	19.6	32.1	
1-Methylnaphthalene	35.22	2.5	40.1	0	87.8	22.016	110.385	29.41	18.0	32.7	
2-Methylnaphthalene	34.7	2.5	40	0	86.8	21.098	111.261	28.76	18.7	34	
Acenaphthylene	33.66	2.5	40.1	0	83.9	23.852	116.857	29.2	14.2	38.8	
Acenaphthene	34.29	2.5	40	0	85.7	27.524	111.73	29.96	13.5	38.6	
Fluorene	3.33	0.8	4.01	0	83.0	31.046	113.32	3	10.4	39.3	
Phenanthrene	1.8	0.6	2.01	0	89.6	42.279	115.749	1.68	6.90	25	
Anthracene	1.8	0.6	2.01	0	89.6	43.767	118.693	1.67	7.49	23.9	
Fluoranthene	3.66	0.3	4.01	0	91.3	55.334	117.461	3.55	3.05	15.7	
Pyrene	3.5	0.3	4.01	0	87.3	57.722	120.832	3.5	0	15.3	
Benz(a)anthracene	0.36	0.02	0.401	0	89.8	70.18	113.452	0.36	0	119	
Chrysene	1.78	0.2	2.01	0	88.6	43.942	141.404	1.7	4.60	16.6	
Benzo(b)fluoranthene	0.34	0.05	0.38	0	89.5	71.192	103.368	0.32	6.06	21.7	
Benzo(k)fluoranthene	0.23	0.02	0.25	0	92.0	75.336	107.209	0.22	4.44	19.4	
Benzo(a)pyrene	0.22	0.02	0.251	0	87.6	74.556	100.742	0.21	4.65	16.7	
Dibenz(a,h)anthracene	0.5	0.04	0.501	0	99.8	80.693	106.931	0.48	4.08	17.3	
Benzo(g,h,i)perylene	0.43	0.03	0.5	0	86.0	55.168	135.014	0.4	7.23	118	
Indeno(1,2,3-cd)pyrene	0.897	0.08	1.002	0	89.5	79.328	104.794	0.989	9.76	17.7	

Sample ID: LCS-7107	Batch ID: 7107	Test Code: SW7470	Units: mg/L	Analysis Date: 12/21/2004	Prep Date: 12/21/2004						
Client ID:	Run ID: MI-LA254_041221B	SeqNo: 327859									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004669	0.0002	0.005	0	93.4	75.2	134	0			

Qualifiers: ND - Not Detected at the Reporting Limit
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 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0412107
Project: Ciniza Water Well #2

Giant Refining Co

0412107

Sample ID: LCSD-7107	Batch ID: 7107	Test Code: SW7470	Units: mg/L	Analysis Date: 12/21/2004	Prep Date: 12/21/2004
Client ID:		Run ID: MI-LA254_041221B		SeqNo: 327883	
Analyte	Result	PQL	SPK value	SPK Ref Val	
Mercury	0.00461	0.0002	0.005	0	
		%REC	LowLimit	HighLimit	RPD Ref Val
		92.2	75.2	134	0.004669
				%RPD	RPDLimit
				1.27	0

Sample ID: LCS	Batch ID: R14065	Test Code: SW6010A	Units: mg/L	Analysis Date: 12/17/2004 8:09:39 AM		Prep Date:					
Client ID:	Run ID:	ICP_041217A	SeqNo:	326948							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4958	0.02	0.5	0	99.2	80	120	0			
Barium	0.4794	0.002	0.5	0	95.9	80	120	0			
Cadmium	0.4785	0.002	0.5	0	95.7	80	120	0			
Chromium	0.4804	0.006	0.5	0	96.1	80	120	0			
Lead	0.4901	0.005	0.5	0	98.0	80	120	0			
Selenium	0.4594	0.05	0.5	0	91.9	80	120	0			
Silver	0.5221	0.005	0.5	0	104	80	120	0			
Uranium	2.244	0.1	2.5	0	89.8	80	120	0			
Vanadium	0.4952	0.05	0.5	0	99.0	80	120	0			
Zinc	0.4815	0.005	0.5	0	96.3	80	120	0			

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: Giant Refining Co
 Work Order: 0412107
 Project: Ciniza Water Well #2

Sample ID: LCSD	Batch ID: R14065	Test Code: SW6010A	Units: mg/L	Analysis Date: 12/17/2004 8:12:49 AM	Prep Date:						
Client ID:	Run ID: ICP_041217A	SeqNo: 326949									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4867	0.02	0.5	0	97.3	80	120	0.4958	1.85	20	
Barium	0.4782	0.002	0.5	0	95.6	80	120	0.4794	0.241	20	
Cadmium	0.4751	0.002	0.5	0	95.0	80	120	0.4785	0.703	20	
Chromium	0.4776	0.006	0.5	0	95.5	80	120	0.4804	0.595	20	
Lead	0.4833	0.005	0.5	0	96.7	80	120	0.4901	1.39	20	
Selenium	0.4593	0.05	0.5	0	91.9	80	120	0.4594	0.0257	20	
Silver	0.5199	0.005	0.5	0	104	80	120	0.5221	0.431	20	
Uranium	2.236	0.1	2.5	0	89.4	80	120	2.244	0.352	20	
Vanadium	0.4944	0.05	0.5	0	98.9	80	120	0.4952	0.146	20	
Zinc	0.4792	0.005	0.5	0	95.8	80	120	0.4815	0.482	20	

Qualifiers: ND - Not Detected at the Reporting Limit
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 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received:

12/10/2004

Work Order Number 0412107

Received by AT

Checklist completed by

Signature

Date

12/10/04

Matrix

Carrier name Client drop-off

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 - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

3°

4° C ± 2 Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____



COVER LETTER

August 25, 2004

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 722-0210

RE: Well #4 SDWA/Iyanbito

Order No.: 0408038

Dear Steve Morris:

Hall Environmental Analysis Laboratory received 2 samples on 8/5/2004 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



Hall Environmental Analysis Laboratory

Date: 25-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408038
Project: Well #4 SDWA/Iyanbito
Lab ID: 0408038-01

Client Sample ID: Well #4
Collection Date: 8/4/2004 3:00:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: MAP
Fluoride	0.21	0.10		mg/L	1	8/5/2004 1:56:45 PM
Nitrogen, Nitrate (As N)	0.12	0.10		mg/L	1	8/5/2004 1:56:45 PM
EPA METHOD 504.1: EDB						Analyst: SCC
1,2-Dibromoethane	ND	0.010		µg/L	1	8/6/2004 12:29:58 PM
EPA METHOD 8082: PCB'S						Analyst: JMP
Aroclor 1016	ND	1.0		µg/L	1	8/24/2004 5:22:53 AM
Aroclor 1221	ND	5.0		µg/L	1	8/24/2004 5:22:53 AM
Aroclor 1232	ND	1.0		µg/L	1	8/24/2004 5:22:53 AM
Aroclor 1242	ND	1.0		µg/L	1	8/24/2004 5:22:53 AM
Aroclor 1248	ND	1.0		µg/L	1	8/24/2004 5:22:53 AM
Aroclor 1254	ND	1.0		µg/L	1	8/24/2004 5:22:53 AM
Aroclor 1260	ND	1.0		µg/L	1	8/24/2004 5:22:53 AM
Surr: Decachlorobiphenyl	106	45.3-140		%REC	1	8/24/2004 5:22:53 AM
Surr: Tetrachloro-m-xylene	66.0	28.1-139		%REC	1	8/24/2004 5:22:53 AM
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	1.0		µg/L	1	8/10/2004
Toluene	ND	1.0		µg/L	1	8/10/2004
Ethylbenzene	ND	1.0		µg/L	1	8/10/2004
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/10/2004
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/10/2004
Naphthalene	ND	2.0		µg/L	1	8/10/2004
1-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
2-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
Acetone	ND	10		µg/L	1	8/10/2004
Bromobenzene	ND	1.0		µg/L	1	8/10/2004
Bromochloromethane	ND	1.0		µg/L	1	8/10/2004
Bromodichloromethane	ND	1.0		µg/L	1	8/10/2004
Bromoform	ND	1.0		µg/L	1	8/10/2004
Bromomethane	ND	2.0		µg/L	1	8/10/2004
2-Butanone	ND	10		µg/L	1	8/10/2004
Carbon disulfide	ND	10		µg/L	1	8/10/2004
Carbon Tetrachloride	ND	1.0		µg/L	1	8/10/2004
Chlorobenzene	ND	1.0		µg/L	1	8/10/2004
Chloroethane	ND	2.0		µg/L	1	8/10/2004
Chloroform	ND	1.0		µg/L	1	8/10/2004
Chloromethane	ND	1.0		µg/L	1	8/10/2004

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 25-Aug-04

CLIENT: Giant Refining Co

Client Sample ID: Well #4

Lab Order: 0408038

Collection Date: 8/4/2004 3:00:00 PM

Project: Well #4 SDWA/Iyanbito

Lab ID: 0408038-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
2-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
4-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
cis-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/10/2004
Dibromochloromethane	ND	1.0		µg/L	1	8/10/2004
Dibromomethane	ND	2.0		µg/L	1	8/10/2004
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,3-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
2,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
Hexachlorobutadiene	ND	1.0		µg/L	1	8/10/2004
2-Hexanone	ND	10		µg/L	1	8/10/2004
Isopropylbenzene	ND	1.0		µg/L	1	8/10/2004
4-Isopropyltoluene	ND	1.0		µg/L	1	8/10/2004
4-Methyl-2-pentanone	ND	10		µg/L	1	8/10/2004
Methylene Chloride	ND	3.0		µg/L	1	8/10/2004
n-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
n-Propylbenzene	ND	1.0		µg/L	1	8/10/2004
sec-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
Styrene	ND	1.0		µg/L	1	8/10/2004
tert-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/10/2004
trans-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/10/2004
Trichlorofluoromethane	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/10/2004
Vinyl chloride	ND	1.0		µg/L	1	8/10/2004
Xylenes, Total	ND	1.0		µg/L	1	8/10/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 25-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408038
Project: Well #4 SDWA/Iyanbito
Lab ID: 0408038-01

Client Sample ID: Well #4
Collection Date: 8/4/2004 3:00:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
Surr: 1,2-Dichloroethane-d4	102	70.6-124		%REC	1	8/10/2004
Surr: 4-Bromofluorobenzene	101	76.4-130		%REC	1	8/10/2004
Surr: Dibromofluoromethane	111	67.2-131		%REC	1	8/10/2004
Surr: Toluene-d8	99.6	82.1-123		%REC	1	8/10/2004

EPA METHOD 8310: PAHS

Analyst: IC

Naphthalene	ND	2.5		µg/L	1	8/21/2004 11:48:01 AM
1-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 11:48:01 AM
2-Methylnaphthalene	ND	2.5		µg/L	1	8/21/2004 11:48:01 AM
Acenaphthylene	ND	2.5		µg/L	1	8/21/2004 11:48:01 AM
Acenaphthene	ND	2.5		µg/L	1	8/21/2004 11:48:01 AM
Fluorene	ND	0.80		µg/L	1	8/21/2004 11:48:01 AM
Phenanthrene	ND	0.60		µg/L	1	8/21/2004 11:48:01 AM
Anthracene	ND	0.60		µg/L	1	8/21/2004 11:48:01 AM
Fluoranthene	ND	0.30		µg/L	1	8/21/2004 11:48:01 AM
Pyrene	ND	0.30		µg/L	1	8/21/2004 11:48:01 AM
Benz(a)anthracene	ND	0.020		µg/L	1	8/21/2004 11:48:01 AM
Chrysene	ND	0.20		µg/L	1	8/21/2004 11:48:01 AM
Benzo(b)fluoranthene	ND	0.050		µg/L	1	8/21/2004 11:48:01 AM
Benzo(k)fluoranthene	ND	0.020		µg/L	1	8/21/2004 11:48:01 AM
Benzo(a)pyrene	ND	0.020		µg/L	1	8/21/2004 11:48:01 AM
Dibenz(a,h)anthracene	ND	0.040		µg/L	1	8/21/2004 11:48:01 AM
Benzo(g,h,i)perylene	ND	0.030		µg/L	1	8/21/2004 11:48:01 AM
Indeno(1,2,3-cd)pyrene	ND	0.080		µg/L	1	8/21/2004 11:48:01 AM
Surr: Benzo(e)pyrene	88.7	54-102		%REC	1	8/21/2004 11:48:01 AM

EPA METHOD 7470: MERCURY

Analyst: CMC

Mercury	ND	0.00020		mg/L	1	8/9/2004
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EPA METHOD 6010C: DISSOLVED METALS

Analyst: NMO

Arsenic	ND	0.020		mg/L	1	8/6/2004 10:18:19 AM
Barium	0.014	0.0020		mg/L	1	8/6/2004 10:18:19 AM
Cadmium	ND	0.0020		mg/L	1	8/6/2004 10:18:19 AM
Chromium	ND	0.0060		mg/L	1	8/6/2004 10:18:19 AM
Lead	ND	0.0050		mg/L	1	8/6/2004 10:18:19 AM
Selenium	ND	0.050		mg/L	1	8/6/2004 10:18:19 AM
Silver	ND	0.0050		mg/L	1	8/6/2004 10:18:19 AM
Uranium	ND	0.10		mg/L	1	8/6/2004 10:18:19 AM

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

Hall Environmental Analysis Laboratory

Date: 25-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408038
Project: Well #4 SDWA/Iyanbito
Lab ID: 0408038-02

Client Sample ID: TRIP BLANK
Collection Date:
Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 504.1: EDB						Analyst: SCC
1,2-Dibromoethane	ND	0.010		µg/L	1	8/6/2004 12:42:50 PM
EPA METHOD 8260B: VOLATILES						Analyst: KTM
Benzene	ND	1.0		µg/L	1	8/10/2004
Toluene	ND	1.0		µg/L	1	8/10/2004
Ethylbenzene	ND	1.0		µg/L	1	8/10/2004
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	8/10/2004
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	8/10/2004
Naphthalene	ND	2.0		µg/L	1	8/10/2004
1-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
2-Methylnaphthalene	ND	4.0		µg/L	1	8/10/2004
Acetone	ND	10		µg/L	1	8/10/2004
Bromobenzene	ND	1.0		µg/L	1	8/10/2004
Bromochloromethane	ND	1.0		µg/L	1	8/10/2004
Bromodichloromethane	ND	1.0		µg/L	1	8/10/2004
Bromoform	ND	1.0		µg/L	1	8/10/2004
Bromomethane	ND	2.0		µg/L	1	8/10/2004
2-Butanone	ND	10		µg/L	1	8/10/2004
Carbon disulfide	ND	10		µg/L	1	8/10/2004
Carbon Tetrachloride	ND	1.0		µg/L	1	8/10/2004
Chlorobenzene	ND	1.0		µg/L	1	8/10/2004
Chloroethane	ND	2.0		µg/L	1	8/10/2004
Chloroform	ND	1.0		µg/L	1	8/10/2004
Chloromethane	ND	1.0		µg/L	1	8/10/2004
2-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
4-Chlorotoluene	ND	1.0		µg/L	1	8/10/2004
cis-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	8/10/2004
Dibromochloromethane	ND	1.0		µg/L	1	8/10/2004
Dibromomethane	ND	2.0		µg/L	1	8/10/2004
1,2-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,3-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,4-Dichlorobenzene	ND	1.0		µg/L	1	8/10/2004
Dichlorodifluoromethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloroethene	ND	1.0		µg/L	1	8/10/2004
1,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004

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

Hall Environmental Analysis Laboratory

Date: 25-Aug-04

CLIENT: Giant Refining Co
Lab Order: 0408038
Project: Well #4 SDWA/Iyanbito
Lab ID: 0408038-02

Client Sample ID: TRIP BLANK
Collection Date:
Matrix: TRIP BLANK

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,3-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
2,2-Dichloropropane	ND	1.0		µg/L	1	8/10/2004
1,1-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
Hexachlorobutadiene	ND	1.0		µg/L	1	8/10/2004
2-Hexanone	ND	10		µg/L	1	8/10/2004
Isopropylbenzene	ND	1.0		µg/L	1	8/10/2004
4-Isopropyltoluene	ND	1.0		µg/L	1	8/10/2004
4-Methyl-2-pentanone	ND	10		µg/L	1	8/10/2004
Methylene Chloride	ND	3.0		µg/L	1	8/10/2004
n-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
n-Propylbenzene	ND	1.0		µg/L	1	8/10/2004
sec-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
Styrene	ND	1.0		µg/L	1	8/10/2004
tert-Butylbenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2,2-Tetrachloroethane	ND	1.0		µg/L	1	8/10/2004
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	8/10/2004
trans-1,2-DCE	ND	1.0		µg/L	1	8/10/2004
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	8/10/2004
1,1,1-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
1,1,2-Trichloroethane	ND	1.0		µg/L	1	8/10/2004
Trichloroethene (TCE)	ND	1.0		µg/L	1	8/10/2004
Trichlorofluoromethane	ND	1.0		µg/L	1	8/10/2004
1,2,3-Trichloropropane	ND	2.0		µg/L	1	8/10/2004
Vinyl chloride	ND	1.0		µg/L	1	8/10/2004
Xylenes, Total	ND	1.0		µg/L	1	8/10/2004
Surr: 1,2-Dichloroethane-d4	104	70.6-124		%REC	1	8/10/2004
Surr: 4-Bromofluorobenzene	106	76.4-130		%REC	1	8/10/2004
Surr: Dibromofluoromethane	114	67.2-131		%REC	1	8/10/2004
Surr: Toluene-d8	99.5	82.1-123		%REC	1	8/10/2004

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



ENERGY LABORATORIES, INC. *2393 Salt Creek Highway (82601)* P.O. Box 3258 * Casper, WY 82602
Toll Free 888.235.0515 * 307.235.0515 * Fax 307.234.1639 * casper@energylab.com

LABORATORY ANALYTICAL REPORT

Client: Hall Environmental

Project: Well 4 Iyanbito

Lab ID: C04080305-001

Client Sample ID: Well #4 (0408038-01)

Report Date: 08/23/04

Collection Date: 08/04/04 15:00

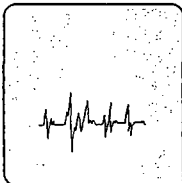
Date Received: 08/06/04

Matrix: Aqueous

Analyses	Result	Units	Qual	MCL/		Method	Analysis Date / By
				RL	QCL		
NON-METALS							
Cyanide, Total Automated	ND	mg/L		0.1		E335.3	08/12/04 11:56 eli-b
RADIONUCLIDES - TOTAL							
Radium 226	ND	pCi/L		2.5		E903.0	08/09/04 14:50 df
Radium 228	ND	pCi/L		2.5		E904.0	08/09/04 14:50 pj

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.

MCL - Maximum contaminant level.
ND - Not detected above the reporting limit.



ASSAIGAI ANALYTICAL LABORATORIES, INC.

4301 Masthead NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259

3332 Wedgewood, Ste. N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820

127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

HALL ENVIRONMENTAL
attn: ANDY FREEMAN
4901 HAWKINS NE, SUITE D
ALBUQUERQUE NM 87109-4372

Explanation of codes

B	analyte detected in Method Blank
E	result is estimated
H	analyzed out of hold time
N	tentatively identified compound
S	subcontracted
1-9	see footnote

STANDARD

Assaigai Analytical Laboratories, Inc.

Certificate of Analysis

Client: HALL ENVIRONMENTAL

Project: WELL 4 LYANBITO

Order: 0408106 HAL03

Receipt: 08-05-04


William P. Diava: President of Assaigai Analytical Laboratories, Inc.

Sample: WELL #4

Collected: 08-04-04 15:00:00 By:

Matrix: AQUEOUS

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0408106-01A		SM-9223B						By: DAW		
BT04216	BT.2004.588.13		E. coli, MMO/MUG	Absent	N/A	1	0		08-05-04	08-06-04
BT04216	BT.2004.588.13		Total Coliform, MMO/MUG	Absent	N/A	1	0		08-05-04	08-06-04

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or footnotes will appear below.

Hall Environmental Analysis Laboratory

Date: 25-Aug-04

CLIENT: Giant Refining Co

Work Order: 0408038

Project: Well #4 SDWA/Tyanbito

QC SUMMARY REPORT

Method Blank

Sample ID	MBLK	Batch ID: R12686	Test Code: E300	Units: mg/L	Analysis Date 8/5/2004 10:18:34 AM	Prep Date
Client ID:		Run ID: LC_040805A			SeqNo: 294143	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Fluoride		ND	0.1			
Nitrogen, Nitrate (As N)		ND	0.1			

Sample ID	MBLK	Batch ID: R12686	Test Code: E300	Units: mg/L	Analysis Date 8/5/2004 10:20:37 PM	Prep Date
Client ID:		Run ID: LC_040805A			SeqNo: 294187	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Fluoride		ND	0.1			
Nitrogen, Nitrate (As N)		ND	0.1			

Sample ID	MB-6258	Batch ID: 6258	Test Code: E504.1	Units: µg/L	Analysis Date 8/6/2004 9:56:00 AM	Prep Date 8/6/2004
Client ID:		Run ID: ECD(14A)_040806A			SeqNo: 294277	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
1,2-Dibromoethane		ND	0.01			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co
 Work Order: 0408038
 Project: Well #4 SDWA/Iyanbito

Sample ID	MB-6260	Batch ID: 6260	Test Code: SW8080A	Units: µg/L	Analysis Date	8/24/2004 2:18:30 AM	Prep Date	8/6/2004			
Client ID:			Run ID:	ECD(17A)_040822A	SeqNo:	298794					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1									
Aroclor 1221	ND	5									
Aroclor 1232	ND	1									
Aroclor 1242	ND	1									
Aroclor 1248	ND	1									
Aroclor 1254	ND	1									
Aroclor 1260	ND	1									
Surr: Decachlorobiphenyl	2.52	0	2.5	0	101	45.3	140	0			
Surr: Tetrachloro-m-xylene	1.72	0	2.5	0	68.8	28.1	139	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Method Blank

CLIENT: Giant Refining Co

Work Order: 0408038

Project: Well #4 SDWA/Iyanbito

Sample ID MB-6265	Batch ID: 6265	Test Code: SW8310	Units: µg/L	Analysis Date 8/21/2004 10:12:01 AM	Prep Date 8/9/2004
Client ID:	Run ID: HUGO_040820A	SeqNo: 298503			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	ND	2.5									
1-Methylnaphthalene	ND	2.5									
2-Methylnaphthalene	ND	2.5									
Acenaphthylene	ND	2.5									
Acenaphthene	ND	2.5									
Fluorene	ND	0.8									
Phenanthrene	ND	0.6									
Anthracene	ND	0.6									
Fluoranthene	ND	0.3									
Pyrene	ND	0.3									
Benz(a)anthracene	ND	0.02									
Chrysene	ND	0.2									
Benzo(b)fluoranthene	ND	0.05									
Benzo(k)fluoranthene	ND	0.02									
Benzo(a)pyrene	ND	0.02									
Dibenz(a,h)anthracene	ND	0.04									
Benzo(g,h,i)perylene	ND	0.03									
Indeno(1,2,3-cd)pyrene	ND	0.08									
Surr: Benzo(e)pyrene	9.01	0	10	0	90.1	54	102	0			

Sample ID MB-6267	Batch ID: 6267	Test Code: SW7470	Units: mg/L	Analysis Date 8/9/2004	Prep Date 8/9/2004
Client ID:	Run ID: MI-LA254_040809A	SeqNo: 295021			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0408038
Project: Well #4 SDWA/Iyanbito

QC SUMMARY REPORT
 Method Blank

Sample ID	MB	Batch ID: R12692	Test Code: SW6010A	Units: mg/L	Analysis Date	8/6/2004 8:35:37 AM	Prep Date					
Client ID:		Run ID: ICP_040806A			SeqNo:	294294						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		ND	0.02									
Barium		ND	0.002									
Cadmium		ND	0.002									
Chromium		ND	0.006									
Lead		ND	0.005									
Selenium		ND	0.05									
Silver		ND	0.005									
Uranium		ND	0.1									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 25-Aug-04

CLIENT: Giant Refining Co
Work Order: 0408038
Project: Well #4 SDWA/Iyanbito

QC SUMMARY REPORT

Method Blank

Sample ID	5ml rb	Batch ID: R12713	Test Code: SW8260B	Units: µg/L	Analysis Date	8/9/2004	Prep Date				
Client ID:		Run ID:	VAL_040809A		SeqNo:	295199					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Toluene	ND	1									
Ethylbenzene	ND	1									
Methyl tert-butyl ether (MTBE)	ND	1									
1,2,4-Trimethylbenzene	ND	1									
1,3,5-Trimethylbenzene	ND	1									
1,2-Dichloroethane (EDC)	ND	1									
1,2-Dibromoethane (EDB)	ND	1									
Naphthalene	ND	2									
1-Methylnaphthalene	ND	4									
2-Methylnaphthalene	ND	4									
Acetone	ND	10									
Bromobenzene	ND	1									
Bromochloromethane	ND	1									
Bromodichloromethane	ND	1									
Bromoform	ND	1									
Bromomethane	ND	2									
2-Butanone	ND	10									
Carbon disulfide	ND	10									
Carbon Tetrachloride	ND	1									
Chlorobenzene	ND	1									
Chloroethane	ND	2									
Chloroform	ND	1									
Chloromethane	ND	1									
2-Chlorotoluene	ND	1									
4-Chlorotoluene	ND	1									
cis-1,2-DCE	ND	1									

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

CLIENT: Giant Refining Co
Work Order: 0408038
Project: Well #4 SDWA/Tyanbito

QC SUMMARY REPORT
Method Blank

cis-1,3-Dichloropropene	ND	1
1,2-Dibromo-3-chloropropane	ND	2
Dibromochloromethane	ND	1
Dibromomethane	ND	2
1,2-Dichlorobenzene	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	1
Dichlorodifluoromethane	ND	1
1,1-Dichloroethane	ND	1
1,1-Dichloroethene	ND	1
1,2-Dichloropropane	ND	1
1,3-Dichloropropane	ND	1
2,2-Dichloropropane	ND	1
1,1-Dichloropropene	ND	1
Hexachlorobutadiene	ND	1
2-Hexanone	ND	10
Isopropylbenzene	ND	1
4-Isopropyltoluene	ND	1
4-Methyl-2-pentanone	ND	10
Methylene Chloride	ND	3
n-Butylbenzene	ND	1
n-Propylbenzene	ND	1
sec-Butylbenzene	ND	1
Styrene	ND	1
tert-Butylbenzene	ND	1
1,1,1,2-Tetrachloroethane	ND	1
1,1,2,2-Tetrachloroethane	ND	1
Tetrachloroethene (PCE)	ND	1
trans-1,2-DCE	ND	1
trans-1,3-Dichloropropene	ND	1
1,2,3-Trichlorobenzene	ND	1
1,2,4-Trichlorobenzene	ND	1
1,1,1-Trichloroethane	ND	1

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Method Blank

Project: Well #4 SDWA/Iyanbito

[illegible]

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits	B - Analyte detected in the associated Method Blank
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits	
			3

Hall Environmental Analysis Laboratory

Date: 25-Aug-04

CLIENT: Giant Refining Co
 Work Order: 0408038
 Project: Well #4 SDWA/Iyanbito

QC SUMMARY REPORT

Sample Duplicate

Sample ID 0408038-01D DUP Batch ID: 6267 Test Code: SW7470 Units: mg/L Analysis Date 8/9/2004 Prep Date 8/9/2004
 Client ID: Well #4 Run ID: MI-LA254_040809A SeqNo: 295024

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002	0	0	0	0	0	0			

Sample ID 0408038-01E DUP Batch ID: R12692 Test Code: SW6010A Units: mg/L Analysis Date 8/6/2004 10:21:16 AM Prep Date
 Client ID: Well #4 Run ID: ICP_040806A SeqNo: 294320

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02	0	0	0	0	0	0	0	20	
Barium	0.01348	0.002	0	0	0	0	0	0.01352	0.264	20	
Cadmium	ND	0.002	0	0	0	0	0	0	0	20	
Chromium	ND	0.006	0	0	0	0	0	0	0	20	
Lead	ND	0.005	0	0	0	0	0	0	0	20	
Selenium	ND	0.05	0	0	0	0	0	0	0	20	
Silver	ND	0.005	0	0	0	0	0	0	0	20	
Uranium	ND	0.1	0	0	0	0	0	0	0	20	

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

Hall Environmental Analysis Laboratory

Date: 25-Aug-04

CLIENT: Giant Refining Co

Work Order: 0408038

Project: Well #4 SDWA/Iyanbito

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS	Batch ID: R12686	Test Code: E300	Units: mg/L	Analysis Date 8/5/2004 10:35:20 AM	Prep Date					
Client ID:		Run ID: LC_040805A			SeqNo: 294144						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4755	0.1	0.5	0	95.1	90	110	0			
Nitrogen, Nitrate (As N)	2.436	0.1	2.5	0	97.4	90	110	0			

Sample ID	LCS	Batch ID: R12686	Test Code: E300	Units: mg/L	Analysis Date 8/5/2004 10:54:14 PM	Prep Date					
Client ID:		Run ID: LC_040805A			SeqNo: 294189						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	0.4508	0.1	0.5	0	90.2	90	110	0			
Nitrogen, Nitrate (As N)	2.372	0.1	2.5	0	94.9	90	110	0			

Sample ID	LCS-6258	Batch ID: 6258	Test Code: E504.1	Units: µg/L	Analysis Date 8/6/2004 10:08:52 AM	Prep Date 8/6/2004					
Client ID:		Run ID: ECD(14A)_040806A			SeqNo: 294278						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.077	0.01	0.1	0	77.0	70	130	0			

Sample ID	LCSD-6258	Batch ID: 6258	Test Code: E504.1	Units: µg/L	Analysis Date 8/6/2004 10:21:49 AM	Prep Date 8/6/2004					
Client ID:		Run ID: ECD(14A)_040806A			SeqNo: 294279						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.072	0.01	0.1	0	72.0	70	130	0.077	6.71	13.5	

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Giant Refining Co
 Work Order: 0408038
 Project: Well #4 SDWA/Iyanbito

Sample ID	LCS-6260	Batch ID: 6260	Test Code: SW8080A	Units: µg/L	Analysis Date 8/24/2004 3:05:02 AM	Prep Date 8/6/2004					
Client ID:			Run ID: ECD(17A)_040822A	SeqNo: 298796							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	7.096	1	10	0	71.0	27.4	132	0			
Aroclor 1260	10.68	1	10	0	107	52.1	148	0			

Sample ID	LCSD-6260	Batch ID: 6260	Test Code: SW8080A		Units: µg/L		Analysis Date 8/24/2004 4:37:48 AM		Prep Date 8/6/2004		
Client ID:			Run ID:	ECD(17A)_040822A		SeqNo: 298801					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	7.658	1	10	0	76.6	27.4	132	7.096	7.62	45.7	
Aroclor 1260	11.08	1	10	0	111	52.1	148	10.68	3.64	30	

Sample ID	100ng Ics	Batch ID: R12713	Test Code: SW8260B	Units: µg/L	Analysis Date 8/9/2004	Prep Date					
Client ID:			Run ID: VAL_040809A	SeqNo: 295201							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	23.45	1	20	0	117	75.3	128	0			
Toluene	21.53	1	20	0	108	87.7	122	0			
Chlorobenzene	19.71	1	20	0	98.6	76.2	130	0			
1,1,1-Dichloroethene	19.25	1	20	0	96.3	70.7	122	0			
Trichloroethene (TCE)	20.92	1	20	0	105	76.9	130	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

CLIENT: Giant Refining Co
Work Order: 0408038
Project: Well #4 SDWA/Iyanbito

Laboratory Control Spike - generic

Sample ID	LCS-6265	Batch ID: 6265	Test Code: SW8310	Units: µg/L	Analysis Date	8/21/2004 11:00:01 AM	Prep Date	8/9/2004			
Client ID:		Run ID:	HUGO_040820A	SeqNo:	298504						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Naphthalene	27.64	2.5	40	0	69.1	20.939	111.211	0			
1-Methylnaphthalene	28.12	2.5	40.1	0	70.1	22.016	110.385	0			
2-Methylnaphthalene	27.2	2.5	40	0	68.0	21.098	111.261	0			
Acenaphthylene	28.18	2.5	40.1	0	70.3	23.852	116.857	0			
Acenaphthene	28.22	2.5	40	0	70.6	27.524	111.73	0			
Fluorene	2.71	0.8	4.01	0	67.6	31.046	113.32	0			
Phenanthrene	1.51	0.6	2.01	0	75.1	42.279	115.749	0			
Anthracene	1.51	0.6	2.01	0	75.1	43.767	118.693	0			
Fluoranthene	3.25	0.3	4.01	0	81.0	55.334	117.461	0			
Pyrene	3.18	0.3	4.01	0	79.3	57.722	120.832	0			
Benz(a)anthracene	0.32	0.02	0.401	0	79.8	70.18	113.452	0			
Chrysene	1.57	0.2	2.01	0	78.1	43.942	141.404	0			
Benzo(b)fluoranthene	0.3	0.05	0.38	0	78.9	71.192	103.368	0			
Benzo(k)fluoranthene	0.21	0.02	0.25	0	84.0	75.336	107.209	0			
Benzo(a)pyrene	0.2	0.02	0.251	0	79.7	74.556	100.742	0			
Dibenz(a,h)anthracene	0.41	0.04	0.501	0	81.8	80.693	106.931	0			
Benzo(g,h,i)perylene	0.44	0.03	0.5	0	88.0	55.168	135.014	0			
Indeno(1,2,3-cd)pyrene	0.848	0.08	1.002	0	84.6	79.328	104.794	0			

Sample ID	LCS-6267	Batch ID: 6267	Test Code: SW7470	Units: mg/L	Analysis Date	8/9/2004	Prep Date	8/9/2004			
Client ID:		Run ID:	MI-LA254_040809A	SeqNo:	295022						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004961	0.0002	0.005	0	99.2	75.2	134	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

CLIENT: Giant Refining Co
Work Order: 0408038
Project: Well #4 SDWA/Iyanbito

Sample ID	LCSD-6267	Batch ID: 6267	Test Code: SW7470	Units: mg/L	Analysis Date	8/9/2004	Prep Date	8/9/2004				
Client ID:			Run ID: MI-LA254_040809A		SeqNo:	295037						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00507	0.0002	0.005	0	101	75.2	134	0.004961	2.19	0	

Sample ID	LCS	Batch ID: R12692	Test Code: SW6010A	Units: mg/L	Analysis Date	8/6/2004 8:38:30 AM	Prep Date					
Client ID:			Run ID: ICP_040806A		SeqNo:	294295						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.5066	0.02	0.5	0	101	80	120	0			
Barium		0.4724	0.002	0.5	0	94.5	80	120	0			
Cadmium		0.4991	0.002	0.5	0	99.8	80	120	0			
Chromium		0.4786	0.006	0.5	0	95.7	80	120	0			
Lead		0.4877	0.005	0.5	0	97.5	80	120	0			
Selenium		0.5447	0.05	0.5	0	109	80	120	0			
Silver		0.4788	0.005	0.5	0	95.8	80	120	0			

Sample ID	LCSD	Batch ID: R12692	Test Code: SW6010A	Units: mg/L	Analysis Date	8/6/2004 8:41:30 AM	Prep Date				
Client ID:		Run ID:	ICP_040806A		SeqNo:	294296					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.5037	0.02	0.5	0	101	80	120	0.5066	0.564	20	
Barium	0.4822	0.002	0.5	0	96.4	80	120	0.4724	2.06	20	
Cadmium	0.5077	0.002	0.5	0	102	80	120	0.4991	1.70	20	
Chromium	0.4859	0.006	0.5	0	97.2	80	120	0.4786	1.51	20	
Lead	0.4945	0.005	0.5	0	98.9	80	120	0.4877	1.39	20	
Selenium	0.5452	0.05	0.5	0	109	80	120	0.5447	0.0927	20	
Silver	0.4917	0.005	0.5	0	98.3	80	120	0.4788	2.67	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QC SUMMARY REPORT

Laboratory Control Spike - generic

CLIENT: Giant Refining Co

Work Order: 0408038

Project: Well #4 SDWA/Iyanbito

Sample ID	LCS U	Batch ID: R12692	Test Code: SW6010A	Units: mg/L	Analysis Date	8/6/2004 10:58:34 AM	Prep Date					
Client ID:		Run ID: ICP_040806A			SeqNo:	294330						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium		5.11	0.1	5	0	102	80	120	0			

Sample ID	LCSD U	Batch ID: R12692	Test Code: SW6010A	Units: mg/L	Analysis Date	8/6/2004 11:01:27 AM	Prep Date				
Client ID:		Run ID: ICP_040806A			SeqNo:	294331					
Analyte		Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Uranium		5.131	0.1	5	103	80	120	5.11	0.414	20	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received:

Work Order Number 0408038

Received by AMG

Checklist completed by

Obongalis 08/05/04
Signature Date

Matrix

Carrier name Client drop-off

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 - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

8°

4° C ± 2 Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Date: _____
Time: _____
Relinquished By: (Signature) _____
Received By: (Signature) _____ 10/5

Received By: (Signature) *[Signature]* 10/5

[illegible]

Remarks:

ks: No pesticides or herbicides needed

Date: 8/5/04	Time: 1015	Relinquished By: (Signature) <i>[Signature]</i>	Received By: (Signature) <i>[Signature]</i>
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

COVER LETTER

December 08, 2004

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 722-0210

RE: Evap. Pond #2 Inlet 111904

Order No.: 0411219

Dear Steve Morris:

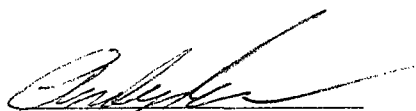
Hall Environmental Analysis Laboratory received 1 sample on 11/19/2004 for the analyses presented in the following report.

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



Hall Environmental Analysis Laboratory

Date: 08-Dec-04

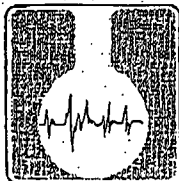
CLIENT: Giant Refining Co
Lab Order: 0411219
Project: Evap. Pond #2 Inlet 111904
Lab ID: 0411219-01

Client Sample ID: Pond #2 Inlet
Collection Date: 11/19/2004 11:00:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	110	100		µg/L	40	11/24/2004 3:19:09 PM
Benzene	24	20		µg/L	40	11/24/2004 3:19:09 PM
Toluene	72	20		µg/L	40	11/24/2004 3:19:09 PM
Ethylbenzene	20	20		µg/L	40	11/24/2004 3:19:09 PM
Xylenes, Total	110	20		µg/L	40	11/24/2004 3:19:09 PM
Surr: 4-Bromofluorobenzene	103	74-118		%REC	40	11/24/2004 3:19:09 PM
EPA METHOD 7470: MERCURY						Analyst: CMC
Mercury	0.0012	0.00020		mg/L	1	12/2/2004
EPA 6010C: TOTAL RECOVERABLE METALS						Analyst: NMO
Arsenic	ND	0.020		mg/L	1	12/2/2004 9:20:49 AM
Barium	0.14	0.020		mg/L	1	12/2/2004 9:20:49 AM
Cadmium	ND	0.0020		mg/L	1	12/2/2004 9:20:49 AM
Chromium	0.012	0.0060		mg/L	1	12/2/2004 9:20:49 AM
Lead	0.0075	0.0050		mg/L	1	12/2/2004 9:20:49 AM
Selenium	ND	0.050		mg/L	1	12/7/2004 8:56:19 AM
Silver	ND	0.0050		mg/L	1	12/2/2004 9:20:49 AM
EPA METHOD 160.1: TDS						Analyst: MAP
Total Dissolved Solids	3800	200		mg/L	4	11/24/2004

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



ASSAIGAI ANALYTICAL LABORATORIES, INC.

4301 Masthead NE • Albuquerque, New Mexico 87109 • (505) 345-8964 • FAX (505) 345-7259

3332 Wedgewood, Ste. N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820
127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

HALL ENVIRONMENTAL
attn: ANDY FREEMAN
4901 HAWKINS NE, SUITE D
ALBUQUERQUE NM 87109-4372

Explanation of codes	
B	analyte detected in Method Blank
E	result is estimated
H	analyzed out of hold time
N	tentatively identified compound
S	subcontracted
1-9	see footnote

Assaigai Analytical Laboratories, Inc.

STANDARD

Certificate of Analysis

Client: HALL ENVIRONMENTAL

Project: EVAP POND2

Order: 0411487 HAL03

Receipt: 11-19-04

William P. Sieve
William P. Sieve, President of Assaigai Analytical Laboratories, Inc.

Sample: POND #2 INLET

Collected: 11-19-04 11:00:00 By:

Matrix: AQUEOUS

QC Group	Run Sequence	CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0411487-01A			EPA 405.1 Biochemical Oxygen Demand					By: CMS		
BOD04148	WC.2004.3313.18		Biochemical Oxygen Demand	1246	mg/L	1	2		11-19-04	11-24-04
0411487-01B			EPA 410.1 Chemical Oxygen Demand					By: NJL		
WCOD04040	WC.2004.3367.14		Chemical Oxygen Demand	2270	mg / L	10	10		12-03-04	12-06-04

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by client or client representative. Sample result of ND indicates Not Detected, ie result is less than the sample specific Detection Limit. Sample specific Detection Limit is determined by multiplying the sample Dilution Factor by the listed Reporting Detection Limit. All results relate only to the items tested. Any miscellaneous workorder information or footnotes will appear below.

Analytical results are not corrected for method blank or field blank contamination.

Hall Environmental Analysis Laboratory

Date: 08-Dec-04

CLIENT: Giant Refining Co

Work Order: 0411219

Project: Evap. Pond #2 Inlet 111904

QC SUMMARY REPORT

Method Blank

Sample ID	Reagent Blank 5m	Batch ID: R13881	Test Code: SW8021	Units: µg/L	Analysis Date	11/24/2004 8:25:04 AM	Prep Date				
Client ID:			Run ID: PIDFID_041124A		SeqNo:	322965					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5									
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	20.19	0	20	0	101	74	118	0			

Sample ID	MB-6991	Batch ID: 6991	Test Code: SW7470	Units: mg/L	Analysis Date	12/2/2004	Prep Date	12/2/2004			
Client ID:			Run ID: MI-LA254_041202A		SeqNo:	324028					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.0002									

Sample ID	MB-6980	Batch ID: 6980	Test Code: SW6010A	Units: mg/L	Analysis Date	12/2/2004 9:05:17 AM	Prep Date	12/1/2004			
Client ID:			Run ID: ICP_041202A		SeqNo: 323941						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.02									
Barium	ND	0.02									
Cadmium	ND	0.002									
Chromium	ND	0.006									
Lead	ND	0.005									
Selenium	0.01884	0.05									J
Silver	0.001192	0.005									J

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits I

CLIENT: Giant Refining Co
Work Order: 0411219
Project: Evap. Pond #2 Inlet 111904

QC SUMMARY REPORT

Method Blank

Sample ID MB-6980 **Batch ID:** 6980 **Test Code:** SW6010A **Units:** mg/L **Analysis Date** 12/7/2004 7:59:54 AM **Prep Date** 12/1/2004
Client ID: **Run ID:** ICP_041207A **SeqNo:** 324781
Analyte **Result** **PQL** **SPK value** **SPK Ref Val** **%REC** **LowLimit** **HighLimit** **RPD Ref Val** **%RPD** **RPDLimit** **Qual**
 Selenium 0.0209 0.05

J

Sample ID MB-6956 **Batch ID:** 6956 **Test Code:** E160.1 **Units:** mg/L **Analysis Date** 11/24/2004 **Prep Date** 11/23/2004
Client ID: **Run ID:** WC_041124C **SeqNo:** 323022
Analyte **Result** **PQL** **SPK value** **SPK Ref Val** **%REC** **LowLimit** **HighLimit** **RPD Ref Val** **%RPD** **RPDLimit** **Qual**
 Total Dissolved Solids ND 50

Qualifiers:

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 08-Dec-04

CLIENT: Giant Refining Co
Work Order: 0411219
Project: Evap. Pond #2 Inlet 111904

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	BTEX std 100ng	Batch ID: R13881	Test Code: SW8021	Units: µg/L	Analysis Date	11/24/2004 2:19:21 PM	Prep Date				
Client ID:			Run ID: PIDFID_041124A		SeqNo: 323077						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE) Benzene Toluene Ethylbenzene Xylenes, Total	35.23	2.5	40	0	88.1	54.9	142	0			
	19.81	0.5	20	0	99.0	81.3	121	0			
	20.17	0.5	20	0	101	84.9	118	0			
	19.93	0.5	20	0	99.6	53.8	149	0			
	59.98	0.5	60	0	100	83.1	122	0			

Sample ID	LCS-6991	Batch ID: 6991	Test Code: SW7470	Units: mg/L	Analysis Date	12/2/2004	Prep Date	12/2/2004			
Client ID:			Run ID: MI-LA254_041202A		SeqNo:	324033					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00542	0.0002	0.005	0	108	75.2	134	0			

Sample ID	LCSD-6991	Batch ID: 6991	Test Code: SW7470	Units: mg/L	Analysis Date	12/2/2004	Prep Date	12/2/2004			
Client ID:			Run ID: MI-LA254_041202A		SeqNo:	324034					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.004943	0.0002	0.005	0	98.9	75.2	134	0.00542	9.21	0	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0411219
Project: Evap. Pond #2 Inlet 111904

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID	LCS-6980	Batch ID: 6980	Test Code: SW6010A	Units: mg/L	Analysis Date	12/2/2004 9:08:09 AM	Prep Date	12/1/2004			
Client ID:			Run ID: ICP_041202A		SeqNo: 323942						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.436	0.02	0.5	0	87.2	80	120	0			
Barium	0.46	0.02	0.5	0	92.0	80	120	0			
Cadmium	0.4281	0.002	0.5	0	85.6	80	120	0			
Chromium	0.4782	0.006	0.5	0	95.6	80	120	0			
Lead	0.4388	0.005	0.5	0	87.8	80	120	0			
Silver	0.4356	0.005	0.5	0.001192	86.9	80	120	0			

Sample ID	LCSD-6980	Batch ID: 6980	Test Code: SW6010A	Units: mg/L	Analysis Date	12/2/2004 9:11:17 AM	Prep Date	12/1/2004			
Client ID:			Run ID: ICP_041202A		SeqNo:	323943					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.4641	0.02	0.5	0	92.8	80	120	0.436	6.24	20	
Barium	0.4811	0.02	0.5	0	96.2	80	120	0.46	4.50	20	
Cadmium	0.4473	0.002	0.5	0	89.5	80	120	0.4281	4.39	20	
Chromium	0.5006	0.006	0.5	0	100	80	120	0.4782	4.58	20	
Lead	0.4614	0.005	0.5	0	92.3	80	120	0.4388	5.03	20	
Silver	0.4582	0.005	0.5	0.001192	91.4	80	120	0.4356	5.05	20	

Sample ID	LCS-6980	Batch ID: 6980	Test Code: SW6010A	Units: mg/L	Analysis Date	12/7/2004 8:02:19 AM	Prep Date	12/1/2004			
Client ID:			Run ID: ICP_041207A		SeqNo:	324782					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.5304	0.05	0.5	0.0209	102	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: Giant Refining Co
Work Order: 0411219
Project: Evap. Pond #2 Inlet 111904

QC SUMMARY REPORT
 Laboratory Control Spike Duplicate

Sample ID	LCSD-6980	Batch ID: 6980	Test Code: SW6010A	Units: mg/L	Analysis Date	12/7/2004 8:04:44 AM	Prep Date	12/1/2004				
Client ID:			Run ID: ICP_041207A		SeqNo: 324783							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium		0.5466	0.05	0.5	0.0209	105	80	120	0.5304	3.01	20	

Sample ID	LCS-6956	Batch ID: 6956	Test Code: E160.1	Units: mg/L	Analysis Date	11/24/2004	Prep Date	11/23/2004				
Client ID:			Run ID: WC_041124C		SeqNo: 323023							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids		982	50	1000	0	98.2	80	120	0			

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received:

Work Order Number 0411219

Received by AT

Checklist completed by

Bonnyales 11/19/04
Signature Date

Matrix

Carrier name Client drop-off

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 - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

6°

4° C ± 2 Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenviro.com

Project Manager: Steve Morris

Sampler: Steve Morris

Samples Cold?: 1 ☐ Yes ☒ No

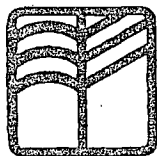
Fax #: 505 722 0210

Date: 3/04	Time: 1340	Relinquished By: (Signature) <i>[Signature]</i>	Received By: (Signature) <i>[Signature]</i>
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature) 1340

[illegible]

Remarks:

Received By: (Signature) *[Signature]* 11/19/04
Received By: (Signature) *[Signature]* 1/340



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LABORATORY REPORT

Client

Giant Refining Company (Gallup)
Route 3, Box 7
Gallup, NM 87301

Order Number

049608

Project Number

Pilot TC Eff.

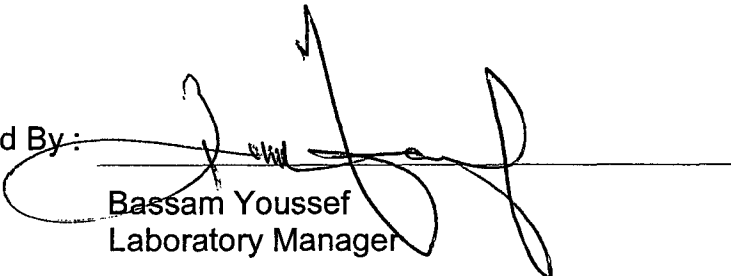
Issued

Monday, December 27, 2004

Total Number of Pages

7

Approved By:


Bassam Youssef
Laboratory Manager

NELAC Accreditation #E87688

A2LA ISO/IEC 17025 Accreditation #0724.01

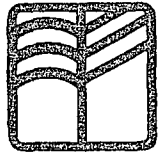
"Analytical Integrity" • A2LA Accreditation #0724.01 • NELAP Certified
595 East Tallmadge Avenue • Akron, Ohio 44310 • Phone: 330-253-8211 • Fax: 330-253-4489
Web Site: www.settek.com

Sample Summary

Client: Giant Refining Company (Gallup)

Order Number: 049608

Laboratory ID	Client ID	Matrix	Sampling Date
049608-01	Pilot TC Eff 4Q04	Liquid	12/9/04



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Report Narrative

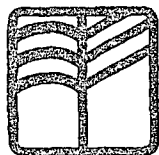
Client: Giant Refining Company (Gallup)

Order Number: 049608

No problems were encountered during analysis of this order number, except as noted.

The test results meet the requirements of the NELAC and A2LA standards, except where noted.

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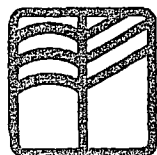
December 27, 2004

Client: Giant Refining Company (Gallup)
Address: Route 3, Box 7
Gallup, NM 87301

Date Collected: 12/9/04
Date Received: 12/10/04
Project #: Pilot TC Eff.
Client ID #: Pilot TC Eff 4Q04
Laboratory ID #: 049608-01
Matrix: Liquid
Extraction Method: 1311
Date of Analysis: 12/14/04

TCLP Metals

<u>Parameter</u>	<u>Reporting Limit</u> <u>(mg/l)</u>	<u>Results</u> <u>(mg/l)</u>	<u>Regulatory Level</u> <u>(mg/l)</u>
Arsenic	0.50	<0.5	5.0
Barium	5.0	<5.0	100.0
Cadmium	0.10	<0.1	1.0
Chromium	0.20	<0.2	5.0
Lead	0.50	<0.5	5.0
Mercury	0.0020	<0.002	0.20
Selenium	0.50	<0.5	1.0
Silver	0.50	<0.5	5.0



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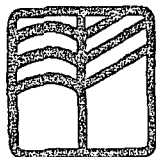
December 27, 2004

Client: Giant Refining Company (Gallup)
Address: Route 3, Box 7
Gallup, NM 87301

Date Collected: 12/9/04
Date Received: 12/10/04
Project #: Pilot TC Eff.
Client ID #: Pilot TC Eff 4Q04
Laboratory ID #: 049608-01
Matrix: Liquid
Extraction Method: 1311
Date of Analysis: 12/13/04

TCLP Volatiles

<u>Parameter</u>	<u>Reporting Limit</u> <u>(mg/L)</u>	<u>Results</u> <u>(mg/L)</u>	<u>Regulatory Level</u> <u>(mg/L)</u>
1,1-Dichloroethene	0.10	<0.1	0.70
1,2-Dichloroethane	0.10	<0.1	0.50
2-Butanone (MEK)	2.0	<2.0	200.0
Benzene	0.10	<0.1	0.50
Carbon tetrachloride	0.10	<0.1	0.50
Chlorobenzene	0.10	<0.1	100.0
Chloroform	0.10	<0.1	6.0
Tetrachloroethene	0.10	<0.1	0.70
Trichloroethene	0.10	<0.1	0.50
Vinyl Chloride	0.20	<0.2	0.20



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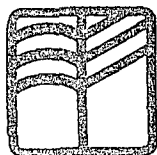
December 27, 2004

Client: Giant Refining Company (Gallup)
Address: Route 3, Box 7
Gallup, NM 87301

Date Collected: 12/9/04
Date Received: 12/10/04
Project #: Pilot TC Eff.
Client ID #: Pilot TC Eff 4Q04
Laboratory ID #: 049608-01
Matrix: Liquid
Extraction Method: 1311
Date of Analysis: 12/16/04

TCLP BNA

<u>Parameter</u>	<u>Reporting Limit</u> <u>(mg/l)</u>	<u>Results</u> <u>(mg/l)</u>	<u>Regulatory Level</u> <u>(mg/l)</u>
1,4-Dichlorobenzene	0.10	<0.1	7.5
2,4,5-Trichlorophenol	0.25	<0.25	400.0
2,4,6--Trichlorophenol	0.25	<0.25	2.0
2,4-Dinitrotoluene	0.10	<0.1	0.13
Cresols	0.10	0.3	200.0
Hexachloro-1,3-butadiene	0.10	<0.1	0.50
Hexachlorobenzene	0.10	<0.1	0.13
Hexachloroethane	0.10	<0.1	3.0
Nitrobenzene	0.10	<0.1	2.0
Pentachlorophenol	0.25	<0.25	100.0
Pyridine	0.25	<0.25	5.0



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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

December 27, 2004

7

Client: Giant Refining Company (Gallup)
Address: Route 3, Box 7
Gallup, NM 87301

Date Collected: 12/9/2004
Date Received: 12/10/2004
Project #: Pilot TC Eff.
Client ID #: Pilot TC Eff 4Q04
Laboratory ID #: 049608-01
Matrix: Liquid
Analyst: BY

<u>Parameter</u>	<u>Date of Analysis</u>	<u>Reporting (mg/L)</u>	<u>Results (mg/L)</u>	<u>Method</u>
Biochemical Oxygen	12/10/2004	5.0	400.0	EPA 405.1

Summit Environmental Technologies, Inc.

Cooler receipt form

Customer: Giant Refining

Order Number: 049608

Date Received: 12/10/09

Associated Order Numbers: _____ N/A

Time Received: _____

Number of Coolers/Boxes: _____ N/A

Shipper: Fed EX UPS Airborne US Cargo US Postal Walk-in Pickup Other: _____

Packaging:	Peanuts	Bubble wrap	Paper	Foam	None	Sample ID	pH	Sample ID	pH
Tape on cooler/box		<u>Y</u>		N	N/A	_____	_____	_____	_____
Custody Seals intact		Y		<u>N</u>	N/A	_____	_____	_____	_____
C.O.C. in plastic		<u>Y</u>		N	N/A	_____	_____	_____	_____
<u>Ice</u> /Blue Ice <u>present</u>		Y		N	N/A	_____	_____	_____	_____
Temperature: <u>8.0</u> °C					N/A	_____	_____	_____	_____
C.O.C. filled out properly		<u>Y</u>		N	N/A	_____	_____	_____	_____
Samples in separate bags		<u>Y</u>		N	N/A	_____	_____	_____	_____
Sample containers intact		<u>Y</u>		N	N/A	_____	_____	_____	_____
Label(s) complete (ID, date)		<u>Y</u>		N	N/A	_____	_____	_____	_____
Client(s) agree with C.O.C.		<u>Y</u>		N	N/A	_____	_____	_____	_____
Correct containers used		<u>Y</u>		N	N/A	_____	_____	_____	_____
Preserved properly		Y		N	<u>N/A</u>	_____	_____	_____	_____
Sufficient Sample		<u>Y</u>		N	N/A	_____	_____	_____	_____
Bubbles absent from 40ml		Y		N	N/A	_____	_____	_____	_____

If no, which ones with anomalies: _____

Was client called about anomalous samples Y N

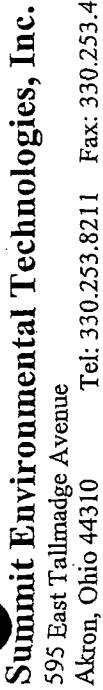
Will client send new sample(s) Y N

Talked to _____

Date/Time _____

Logged in by: BN

Comments: _____



Summit Environmental Technologies, Inc.

595 East Tallmadge Avenue
Akron, Ohio 44310

Tel: 330.253.8211 Fax: 330.253.4489

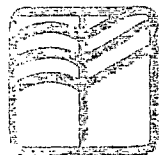
Analysis Request/Chain of Custody

For Summit Environmental Technologies, Inc. use only

Page _____ of _____.

SET No.

[illegible]



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Analytical Laboratories

LABORATORY REPORT

Client

Giant Refining Company (Gallup)
Route 3, Box 7
Gallup, NM 87301

Order Number

047005

Project Number

T.C.Eff.

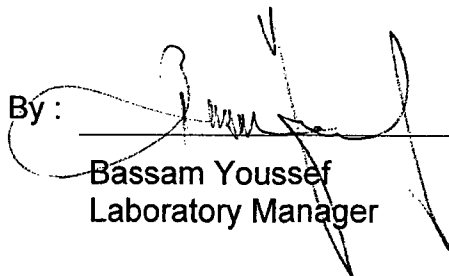
Issued

Thursday, September 23, 2004

Total Number of Pages

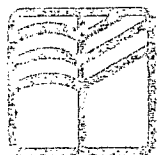
7

Approved By :


Bassam Youssef
Laboratory Manager

NELAC Accreditation #E87688

A2LA ISO/IEC 17025 Accreditation #0724.01



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Analytical Laboratories

2

Sample Summary

Client: Giant Refining Company (Gallup)

Order Number: 047005

Laboratory ID	Client ID	Matrix	Sampling Date
047005-01	T.C Eff. 91504	Liquid	9/15/04

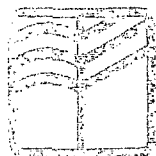
Report Narrative

Client: Giant Refining Company (Gallup)

Order Number: 047005

No problems were encountered during analysis of this order number, except as noted.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the client. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the client for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.



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Analytical Laboratories

September 23, 2004

4

Client: Giant Refining Company (Gallup)
Address: Route 3, Box 7
Gallup, NM 87301

Date Collected: 9/15/04
Date Received: 9/17/04
Project #: T.C.Eff.
Client ID #: T.C Eff. 91504
Laboratory ID #: 047005-01
Matrix: Liquid
Extraction Method: 1311
Date of Analysis: 9/20/04

TCLP Metals

<u>Parameter</u>	<u>Detection Limit</u> <u>(mg/l)</u>	<u>Results</u> <u>(mg/l)</u>	<u>Regulatory Level</u> <u>(mg/l)</u>
Arsenic	0.50	<0.5	5.0
Barium	5.0	<5.0	100.0
Cadmium	0.10	<0.1	1.0
Chromium	0.20	<0.2	5.0
Lead	0.50	<0.5	5.0
Mercury	0.020	<0.02	0.20
Selenium	0.50	<0.5	1.0
Silver	0.50	<0.5	5.0



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Analytical Laboratories

September 23, 2004

5

Client: Giant Refining Company (Gallup)
Address: Route 3, Box 7
Gallup, NM 87301

Date Collected: 9/15/04
Date Received: 9/17/04
Project #: T.C.Eff.
Client ID #: T.C Eff. 91504
Laboratory ID #: 047005-01
Matrix: Liquid
Extraction Method: 1311
Date of Analysis: 9/18/04

TCLP Volatiles

<u>Parameter</u>	<u>Detection Limit</u> <u>(mg/L)</u>	<u>Results</u> <u>(mg/L)</u>	<u>Regulatory Level</u> <u>(mg/L)</u>
1,1-Dichloroethene	0.10	<0.1	0.70
1,2-Dichloroethane	0.10	<0.1	0.50
2-Butanone (MEK)	2.0	<2.0	200.0
Benzene	0.10	<0.1	0.50
Carbon tetrachloride	0.10	<0.1	0.50
Chlorobenzene	0.10	<0.1	100.0
Chloroform	0.10	<0.1	6.0
Tetrachloroethene	0.10	<0.1	0.70
Trichloroethene	0.10	<0.1	0.50
Vinyl Chloride	0.20	<0.2	0.20



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Analytical Laboratories

6

September 23, 2004

Client: Giant Refining Company (Gallup)
Address: Route 3, Box 7
Gallup, NM 87301

Date Collected: 9/15/04
Date Received: 9/17/04
Project #: T.C.Eff.
Client ID #: T.C Eff. 91504
Laboratory ID #: 047005-01
Matrix: Liquid
Extraction Method: 1311
Date of Analysis: 9/22/04

TCLP BNA

<u>Parameter</u>	<u>Detection Limit</u> <u>(mg/l)</u>	<u>Results</u> <u>(mg/l)</u>	<u>Regulatory Level</u> <u>(mg/l)</u>
1,4-Dichlorobenzene	0.10	<0.1	7.5
2,4,5-Trichlorophenol	0.25	<0.25	400.0
2,4,6--Trichlorophenol	0.25	<0.25	2.0
2,4-Dinitrotoluene	0.10	<0.1	0.13
Cresols	0.10	<0.1	200.0
Hexachloro-1,3-butadiene	0.10	<0.1	0.50
Hexachlorobenzene	0.10	<0.1	0.13
Hexachloroethane	0.10	<0.1	3.0
Nitrobenzene	0.10	<0.1	2.0
Pentachlorophenol	0.25	<0.25	100.0
Pyridine	0.25	<0.25	5.0



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ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

September 23, 2004

7

Client: Giant Refining Company (Gallup)
Address: Route 3, Box 7
Gallup, NM 87301

Date Collected: 9/15/04
Date Received: 9/17/04
Project #: T.C.Eff.
Client ID #: T.C Eff. 91504
Laboratory ID #: 047005-01
Matrix: Liquid
Analyst: DL-C

<u>Parameter</u>	<u>Date of Analysis</u>	<u>Detection Limit</u> (mg/L)	<u>Results</u> (mg/L)	<u>Method</u>
Biochemical Oxygen Dema	9/17/04	5.0	995.0	EPA 405.1

Summit Environmental Technologies, Inc.

Cooler receipt form

Customer: Great Refining

Order Number: _____

Date Received: 9-17-04

Associated Order Numbers: _____ N/A

Time Received: _____

Number of Coolers/Boxes: _____ N/A

Shipper: RED EX UPS Airborne US Cargo US Postal Walk-in Pickup Other: _____

Packaging: Peanuts Bubble wrap Paper Foam None Sample ID pH Sample ID pH

Tape on cooler/box Y N N/A _____

Custody Seals intact Y N N/A _____

C.O.C. in plastic Y N N/A _____

Ice /Blue Ice present Y N N/A _____

Temperature: 4.0 °C N/A _____

C.O.C. filled out properly Y N N/A _____

Samples in separate bags Y N N/A _____

Sample containers intact Y N N/A _____

Label(s) complete (ID, date) Y N N/A _____

Label(s) agree with C.O.C. Y N N/A _____

Correct containers used Y N N/A _____

Preserved properly Y N N/A _____

Sufficient Sample Y N N/A _____

Bubbles absent from 40ml Y N N/A _____

If no, which ones with anomalies: _____

Was client called about anomalous samples Y N

Will client send new sample(s) Y N

Talked to: _____ Date/Time: _____

Logged in by: _____

Comments: _____



Summit Environmental Technologies, Inc.
595 East Tallmadge Avenue
Akron, Ohio 44310

Tel: 330.253.8211 Fax: 330.253.4489

Analysis Request/Chain of Custody

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Page 1 of 1

SET No.

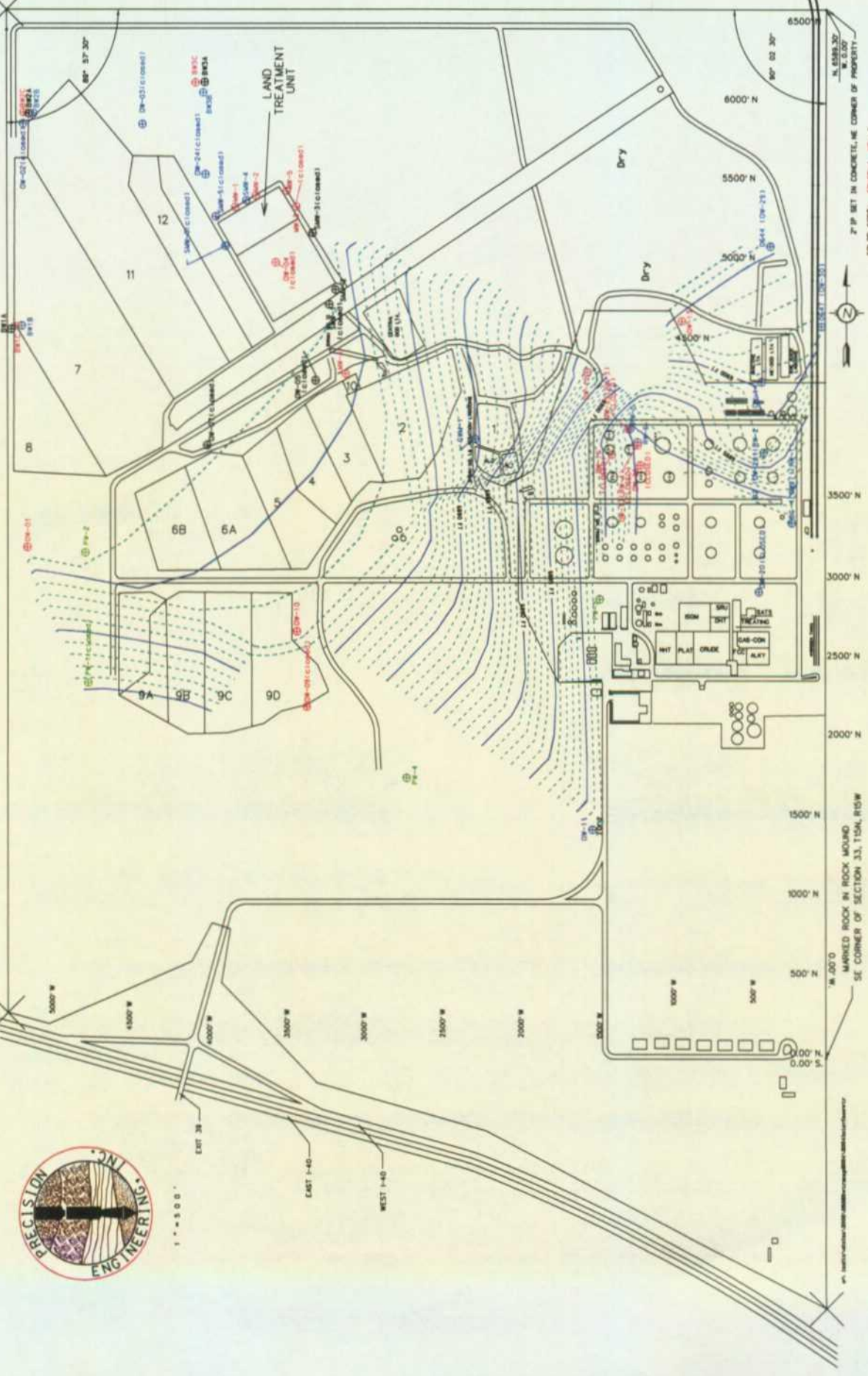
Client Name		Project Name		Composite		Grab		Matrix: S=Solid, L=Liquid, O=Oil SL=Sludge, A=Air		Preservative		Number of Containers		Analytical Parameters and Methods	
Client Address		Project Address		Report to		Check if Ohio VAP samples ☐		PO #		Date Collected		Time Collected			
Client Phone No.		Client Fax No.		Please Fax Results ☒		Sample Identification		Date		Time					
Contact Person		Contact Person		Quote No.											
Sampled by		Sampled by													
01	T.C. Effluent	9/15/04	1500 hrs	9/15/04	1500 hrs	X	L	2 mL	X	X	TCLP - Metals BOD				
047005-01															
Notes/Comments: Use Care Handling Samples (Travel Center Waste Water)															
Relinquished by:		Date		Time		Received by:		Date		Time					
S.C. Morris		9/15/04		1530											
Received in lab by:		Date		Time		Rush Requested:		Days							
S.C. Morris		9/17/04													

White and yellow pages should accompany samples to the laboratory. The client retains the pink page.

CINIZA REFINERY Alluvium/Chinle Group Interface Water Levels



1" = 500'



2" P SET IN CONCRETE NE CORNER OF PROPERTY
N. 6500.30' W. 0.00'
COLOR CODE: **SOILED** WELLS
CHINLE/ALLUVIUM INTERFACE WELLS
UPPER SAND WELLS
NOTE: CLOSED = ABANDONED
RAIN WATER PRODUCTION WELL

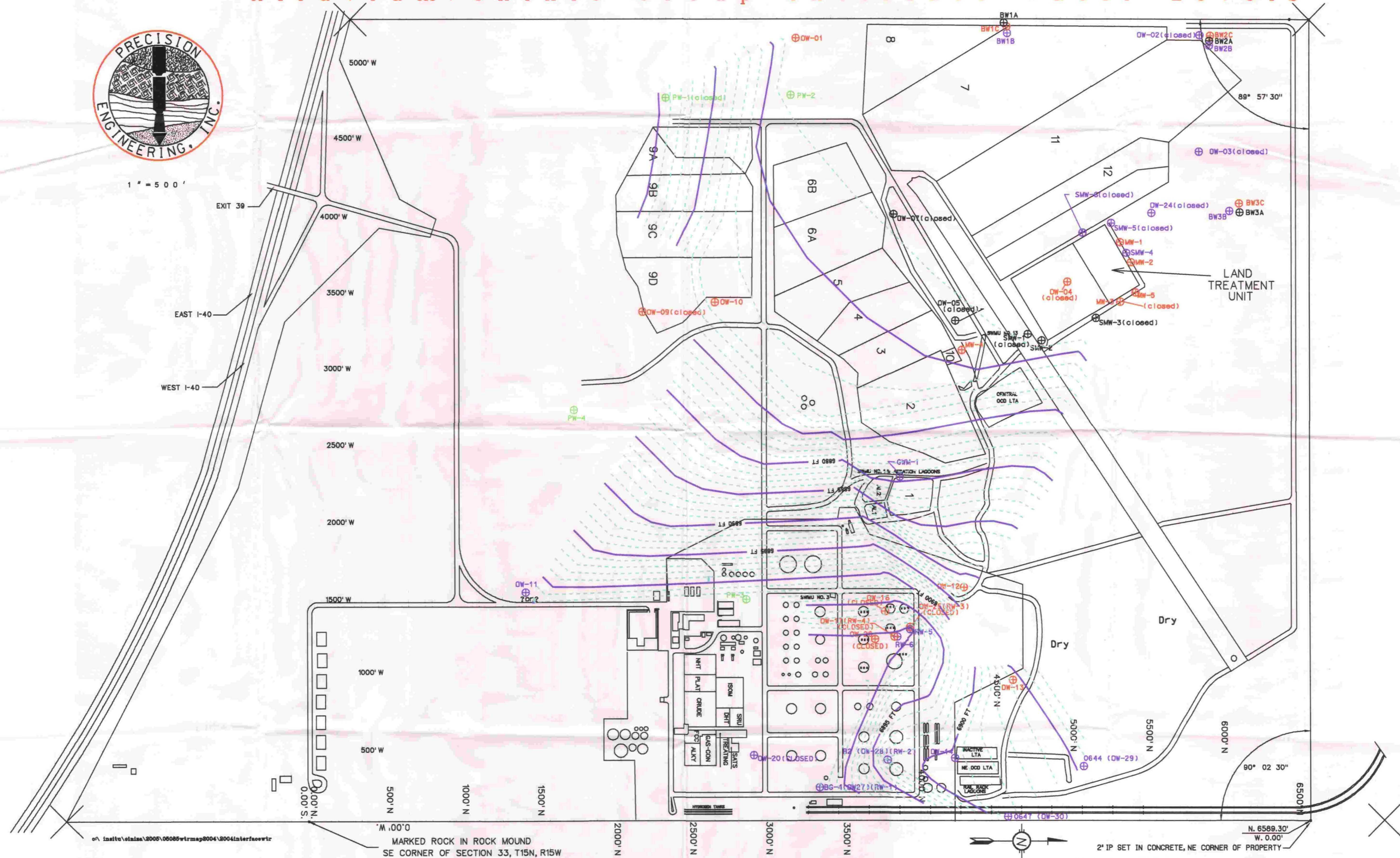
MARKED ROCK IN ROCK MOUND
SE CORNER OF SECTION 33, T15N, R10W

CINIZA REFINERY

Alluvium/Chinle Group Interface Water Levels



1" = 500'



COLOR CODE: SONSELA WELLS
CHINLE/ALLUVIUM INTERFACE WELLS
UPPER SAND WELLS
RAW WATER PRODUCTION WELL

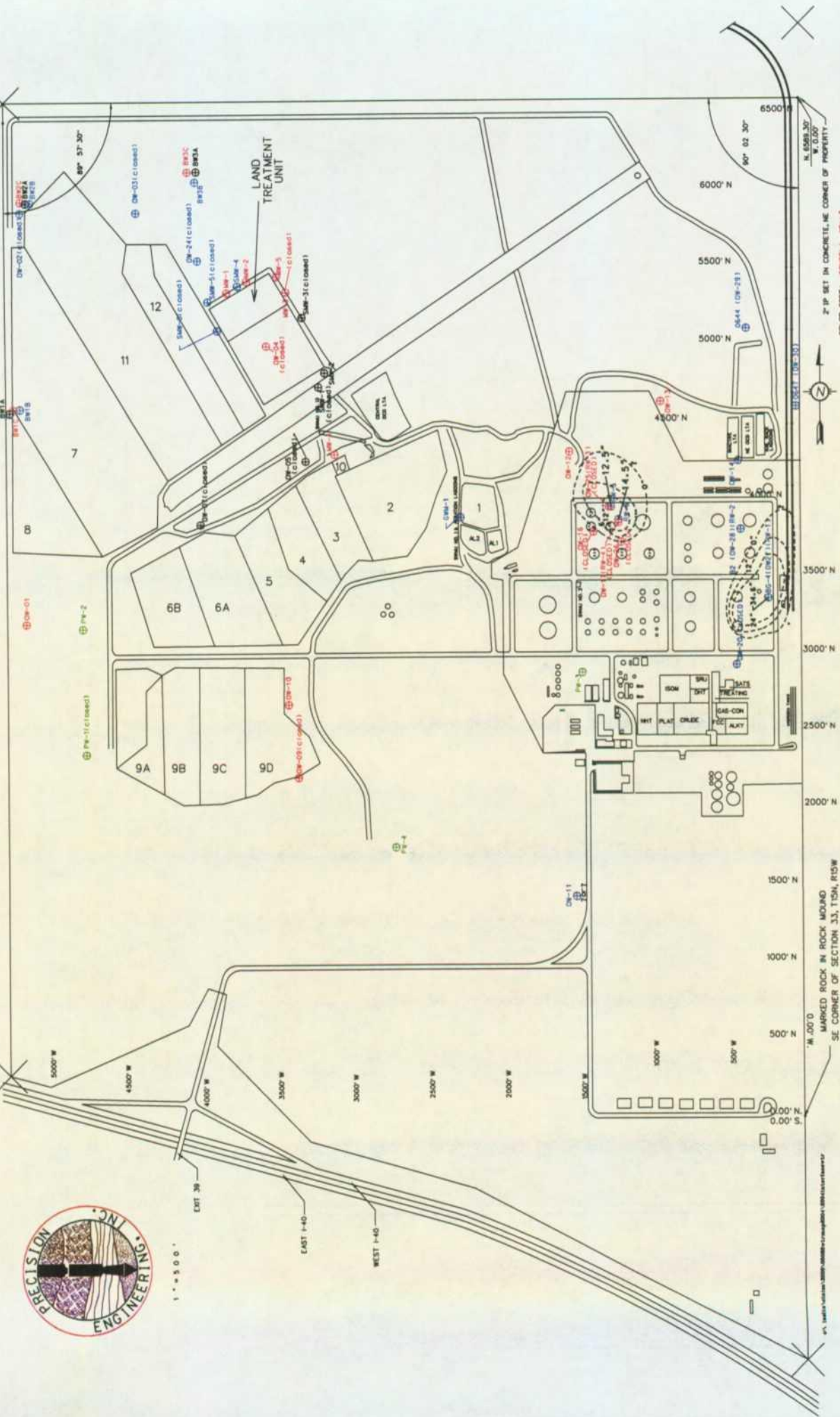
NOTE: CLOSED = ABANDONED

PERMIT CONDITION 16 IV
PLOTS OF WATER TABLE ELEVATION VS TIME

**We currently have one data point and therefore cannot plot at
this time**

CINIZA REFINERY

Separate Phase Hydrocarbon Thickness



CINIZA REFINERY

Separate Phase Hydrocarbon Thickness



1" = 500'



COLOR CODE: SONSOLA WELLS
CHINLE/ALLUVIUM INTERFACE WELLS
UPPER SAND WELLS
RAW WATER PRODUCTION WELL

NOTE: CLOSED = ABANDONED

GIANT CINIZA REFINERY

GROUNDWATER DISCHARGE PERMIT GW-032

RECOVERY WELL INSPECTIONS

Permit Requirement: GW-032

Condition Permit ID #: OCD Sect. 9, Item 4

Monitoring Required: Measurement of product layer thickness and bailing of product.

Equipment Identification: RW-1, RW-2, RW-5, RW-6

<u>Date/Time of Measurement</u>	<u>Quarter</u>	<u>Well #</u>	<u>Depth to Product (inches)</u>	<u>Depth to Water (feet)</u>	<u>Product Level Thickness (feet)</u>	<u>Volume of Product Bailed (gallons)</u>
9-10-04 1030 hrs	3 rd	RW-1	32'5.25"	35'4.5"	2'10.6"	10 gallons
9-10-04 0900 hrs	3 rd	RW-2	No Product	27'9 1/2"	No Product	0 gallons
9-13-04 1300 hrs	3 rd	RW-5	32'11"	33'11.5"	1'0.5"	4 gallons
9-10-04 1400 hrs	3 rd	RW-6	33'1.5"	34'4"	1'2.5"	4 gallons

Name and Title of person who performed measurement:

Stephen C. Morris Env. Coordinator

Signature:

Stephen C. Morris

CC: Ed Riege



COVER LETTER

May 18, 2004

Dorinda Mancini
Giant Refining Co.
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-0227
FAX (505) 722-0210

RE: Ciniza NE OCD Landfarm

Order No.: 0405116

Dear Dorinda Mancini:

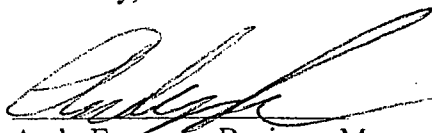
Hall Environmental Analysis Laboratory received 2 samples on 5/14/2004 for the analyses presented in the following report.

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



Hall Environmental Analysis Laboratory

Date: 18-May-04

CLIENT: Giant Refining Co
Lab Order: 0405116
Project: Ciniza NE OCD Landfarm
Lab ID: 0405116-01

Client Sample ID: NE OCD LF-No
Collection Date: 5/13/2004 2:00:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	1400	100		mg/Kg	10	5/17/2004 3:17:04 PM
Motor Oil Range Organics (MRO)	910	500		mg/Kg	10	5/17/2004 3:17:04 PM
Surr: DNOP	121	60-124		%REC	10	5/17/2004 3:17:04 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/16/2004 7:19:18 PM
Surr: BFB	95.9	74-118		%REC	1	5/16/2004 7:19:18 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

Hall Environmental Analysis Laboratory

Date: 18-May-04

CLIENT: Giant Refining Co
Lab Order: 0405116
Project: Ciniza NE OCD Landfarm
Lab ID: 0405116-02

Client Sample ID: NE OCD LF-So
Collection Date: 5/13/2004 2:15:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	1000	100		mg/Kg	10	5/17/2004 3:47:35 PM
Motor Oil Range Organics (MRO)	800	500		mg/Kg	10	5/17/2004 3:47:35 PM
Surr: DNOP	122	60-124		%REC	10	5/17/2004 3:47:35 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/16/2004 7:50:36 PM
Surr: BFB	101	74-118		%REC	1	5/16/2004 7:50:36 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

Hall Environmental Analysis Laboratory

Date: 18-May-04

CLIENT: Giant Refining Co
Work Order: 0405116
Project: Ciniza NE OCD Landfarm

QC SUMMARY REPORT
Method Blank

Sample ID	MB-5785	Batch ID: 5785	Test Code: SW8015	Units: mg/Kg	Analysis Date	5/17/2004 3:12:08 AM	Prep Date	5/16/2004			
Client ID:			Run ID:	FID(17A) 2_040517A	SeqNo:	273951					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10									
Motor Oil Range Organics (MRO)	ND	50									
Surr: DNOP	9.993	0	10	0	99.9	60	124	0			

Sample ID	MB-5784	Batch ID: 5784	Test Code: SW8015	Units: mg/Kg	Analysis Date	5/16/2004 1:35:56 PM	Prep Date	5/14/2004			
Client ID:			Run ID:	PIDFID_040516A	SeqNo:	273436					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	910.9	0	1000	0	91.1	74	118	0			

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

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: 18-May-04

CLIENT: Giant Refining Co
Work Order: 0405116
Project: Ciniza NE OCD Landfarm

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID	LCS-5785	Batch ID: 5785	Test Code: SW8015	Units: mg/Kg	Analysis Date	5/17/2004 3:42:17 AM	Prep Date	5/16/2004				
Client ID:			Run ID: FID(17A) 2_040517A		SeqNo: 273952							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		50.35	10	50	0	101	67.4	117	0			
Sample ID	LCSD-5785	Batch ID: 5785	Test Code: SW8015	Units: mg/Kg	Analysis Date	5/17/2004 4:12:28 AM	Prep Date	5/16/2004				
Client ID:			Run ID: FID(17A) 2_040517A		SeqNo: 273953							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)		51.59	10	50	0	103	67.4	117	50.35	2.42	17.4	
Sample ID	LCS-5784	Batch ID: 5784	Test Code: SW8015	Units: mg/Kg	Analysis Date	5/16/2004 3:09:50 PM	Prep Date	5/14/2004				
Client ID:			Run ID: PIDFID_040516A		SeqNo: 273437							
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)		24.84	5.0	25	0	99.4	73.8	120	0			

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

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received:

5/14/2004

Work Order Number 0405116

Received by AMG

Checklist completed by

Abenjales 05/14/04
Signature Date

Matrix

Carrier name Client drop-off

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 - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒

Container/Temp Blank temperature?

7°

4° C ± 2 Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite A
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: <i>Unizor Refractory</i>	Project Name: <i>Unizor</i>
<i>Grant Refractory Co</i>	<i>NE OCD Landfill</i>
Address: <i>Rt 6 Box 7</i>	Project #: _____
<i>Gallup, NM 87301</i>	Project Manager: <i>D. Mancini</i>
Phone #: <i>505-722-3833</i>	Sampler: <i>Steve Morris</i>
Fax #: <i>505-722-0240</i>	Samples Col'd?: ☒ Yes ☐ No <i>7.0</i>

[illegible]

Date: 11/14/04	Time: 10:00	Relinquished By: (Signature) <i>[Signature]</i>	Received By: (Signature) <i>[Signature]</i>
Date: 11/14/04	Time: 10:50	Relinquished By: (Signature) <i>[Signature]</i>	Received By: (Signature) <i>[Signature]</i>

ANALYSIS REQUEST

[illegible]

Remarks:

Flash & my results

Railroad Rack Lagoon SWMU #8

All analysis are in mg/kg (ppm)

Sample ID #	Date	Fluoride	Chloride	Nitrate	Sulfate	Nitrite	Phosphorus	DRO	MRO	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes, Total
RR-N-1	11/18/2004	18	320	4.9	680	ND	ND	ND	ND	ND	ND	ND	ND	ND
RR-E-1	11/18/2004	6.1	54	ND	74	ND	ND	81	ND	ND	ND	ND	ND	ND
RR-S-1	11/18/2004	4.6	27	ND	28	ND	ND	31	ND	ND	ND	ND	ND	0.082
RR-W-1	11/18/2004	4.6	37	ND	ND	ND	ND	12	ND	ND	ND	ND	ND	ND
RR-N-1 WALL	11/18/2004	3.4	300	ND	610	ND	ND	ND	ND	ND	ND	ND	ND	ND
RR-S-1 WALL	11/18/2004	4.7	16	ND	380	ND	ND	ND	ND	ND	ND	ND	ND	ND
RR-E-1 WALL N	11/18/2004	36	16	6.6	270	ND	ND	150	ND	ND	ND	ND	ND	ND
RR-E-1 WALL S	11/20/2004	ND	57	ND	ND	ND	ND	6300	ND	ND	0.57	0.86	14	83
RR-W-1 WALL N	11/18/2004	14	290	4.3	860	ND	ND	450	140	ND	ND	ND	ND	ND
RR-W-1 WALL S	11/18/2004	7.9	33	ND	39	ND	ND	310	ND	ND	ND	ND	ND	ND
RR-B-1	11/18/2004	4.5	34	ND	ND	ND	ND	99	ND	ND	ND	ND	ND	0.52
RR-B-2	11/18/2004	7.5	17	ND	680	ND	ND	ND	ND	ND	ND	ND	ND	ND
RR-BP-1	11/18/2004	5.4	60	ND	ND	ND	ND	3600	ND	ND	2.5	27	17	110
RR-BP-2	11/18/2004	8.1	59	ND	24	ND	ND	2700	ND	ND	2.2	25	15	100
Sample ID #	Date	Mercury	Arsenic	Barium	Cadmium	Calcium	Chromium	Lead	Magnesium	Potassium	Selenium	Silver	Sodium	pH
RR-N-1	11/18/2004	0	ND	250	0	18000	7	14	5200	2100	ND	ND	2000	8.25
RR-E-1	11/18/2004	0	ND	290	0	16000	5.8	5.7	4600	1300	ND	ND	1300	9.23
RR-S-1	11/18/2004	0	ND	300	0	17000	5.6	5.1	4400	1400	ND	ND	870	9.05
RR-W-1	11/18/2004	0	ND	310	0	16000	7	7.8	4800	1300	ND	ND	1300	9.13
RR-N-1 WALL	11/18/2004	0	ND	280	0	18000	7.6	5.3	5800	2700	ND	ND	1500	8.37
RR-S-1 WALL	11/18/2004	0	ND	300	0	17000	6.9	5.9	5400	2000	ND	ND	1000	8.55
RR-E-1 WALL N	11/18/2004	0	ND	260	0	15000	6.3	6.2	4600	1700	ND	ND	1200	8.58
RR-E-1 WALL S	11/20/2004	0	ND	250	0	28000	4.5	7.7	4200	690	ND	ND	ND	8.88
RR-W-1 WALL N	11/18/2004	0.037	ND	460	0	32000	27	11	4300	1200	ND	ND	1100	8.21
RR-W-1 WALL S	11/18/2004	0	ND	320	0	17000	3.1	2.9	4200	1000	ND	ND	920	8.89
RR-B-1	11/18/2004	0	ND	260	0	15000	5.9	5.6	4600	1300	ND	ND	1400	9.06
RR-B-2	11/18/2004	0	ND	320	0	17000	5.1	5.1	4200	1000	ND	ND	1300	8.75
RR-BP-1	11/18/2004	0.082	ND	240	0.1	16000	5.5	12	3300	1000	ND	ND	590	8.25
RR-BP-2	11/18/2004	0	ND	170	0	13000	4.4	7.4	3000	940	ND	ND	570	8.51
Background		0.0092 #DIV/0! 295.38 0.0077 18615 7.4846 7.2538 4584.6 1437.7 #DIV/0! #DIV/0! 1206.7 8.7077												
BG-1	5/23/1997	0.02	ND	240	ND	-	8	7	-	-	ND	ND	-	8.79
BG-2	5/24/1997	ND	ND	240	ND	-	13	8	-	-	ND	ND	-	9.04
BG-3	5/25/1997	ND	ND	310	ND	-	13	10	-	-	ND	ND	-	8.94
BG-4	5/26/1997	ND	ND	240	ND	-	13	7	-	-	ND	ND	-	-



COVER LETTER

December 03, 2004

Steve Morris
Giant Refining Co
Rt. 3 Box 7
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 722-0210

RE: Railroad Rack Lagoon SWMU

Order No.: 0411218

Dear Steve Morris:

Hall Environmental Analysis Laboratory received 13 samples on 11/19/2004 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



CLIENT: Giant Refining Co
Project: Railroad Rack Lagoon SWMU
Lab Order: 0411218

CASE NARRATIVE

Analytical Comments for METHOD 300_S, SAMPLE 0411218-09A MS: Unable to recover o-PO4-P due to possible matrix interference. IN12-04070 Analytical Comments for METHOD 300_S, SAMPLE 0411218-09A MSD: Unable to recover o-PO4-P due to possible matrix interference. IN12-04070

Full Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0411218
Project: Railroad Rack Lagoon SWMU
Lab ID: 0411218-01

Client Sample ID: RR-N-1
Collection Date: 11/18/2004 8:00:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: MAP
Fluoride	18	3.0		mg/Kg	10	11/30/2004 11:48:28 AM
Chloride	320	3.0		mg/Kg	10	11/30/2004 11:48:28 AM
Nitrogen, Nitrate (As N)	4.9	3.0		mg/Kg	10	11/30/2004 11:48:28 AM
Sulfate	680	15		mg/Kg	10	11/30/2004 11:48:28 AM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 11:48:28 AM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 11:48:28 AM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/23/2004 12:13:36 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/23/2004 12:13:36 PM
Surr: DNOP	78.7	60-124		%REC	1	11/23/2004 12:13:36 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/23/2004 3:37:35 PM
Benzene	ND	0.025		mg/Kg	1	11/23/2004 3:37:35 PM
Toluene	ND	0.025		mg/Kg	1	11/23/2004 3:37:35 PM
Ethylbenzene	ND	0.025		mg/Kg	1	11/23/2004 3:37:35 PM
Xylenes, Total	ND	0.025		mg/Kg	1	11/23/2004 3:37:35 PM
Surr: 4-Bromofluorobenzene	99.8	74-118		%REC	1	11/23/2004 3:37:35 PM
EPA METHOD 7471: MERCURY						Analyst: CMC
Mercury	ND	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						Analyst: CMC
Arsenic	ND	2.5		mg/Kg	1	11/23/2004 12:16:56 PM
Barium	250	0.99		mg/Kg	10	11/24/2004 4:28:22 PM
Cadmium	ND	0.10		mg/Kg	1	11/23/2004 12:16:56 PM
Calcium	18000	130		mg/Kg	5	11/23/2004 4:51:19 PM
Chromium	7.0	0.30		mg/Kg	1	11/23/2004 12:16:56 PM
Lead	14	0.25		mg/Kg	1	11/23/2004 12:16:56 PM
Magnesium	5200	25		mg/Kg	1	11/23/2004 12:16:56 PM
Potassium	2100	50		mg/Kg	1	11/23/2004 12:16:56 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 12:16:56 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 12:16:56 PM
Sodium	2000	25		mg/Kg	1	11/23/2004 12:16:56 PM
EPA METHOD 150.1: PH						Analyst: CMC
pH	8.25	0.010		pH Units	1	12/1/2004

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

Hall Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co

Client Sample ID: RR-E-1

Lab Order: 0411218

Collection Date: 11/18/2004 8:15:00 AM

Project: Railroad Rack Lagoon SWMU

Lab ID: 0411218-02

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: MAP
Fluoride	6.1	3.0		mg/Kg	10	11/30/2004 12:05:17 PM
Chloride	54	3.0		mg/Kg	10	11/30/2004 12:05:17 PM
Nitrogen, Nitrate (As N)	ND	3.0		mg/Kg	10	11/30/2004 12:05:17 PM
Sulfate	74	15		mg/Kg	10	11/30/2004 12:05:17 PM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 12:05:17 PM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 12:05:17 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	81	10		mg/Kg	1	11/22/2004 8:26:19 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/22/2004 8:26:19 PM
Surr: DNOP	71.3	60-124		%REC	1	11/22/2004 8:26:19 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.20		mg/Kg	2	11/23/2004 4:07:37 PM
Benzene	ND	0.050		mg/Kg	2	11/23/2004 4:07:37 PM
Toluene	ND	0.050		mg/Kg	2	11/23/2004 4:07:37 PM
Ethylbenzene	ND	0.050		mg/Kg	2	11/23/2004 4:07:37 PM
Xylenes, Total	ND	0.050		mg/Kg	2	11/23/2004 4:07:37 PM
Surr: 4-Bromofluorobenzene	103	74-118		%REC	2	11/23/2004 4:07:37 PM
EPA METHOD 7471: MERCURY						Analyst: CMC
Mercury	ND	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						Analyst: CMC
Arsenic	ND	2.5		mg/Kg	1	11/23/2004 12:20:55 PM
Barium	290	0.96		mg/Kg	10	11/24/2004 4:32:37 PM
Cadmium	ND	0.10		mg/Kg	1	11/23/2004 12:20:55 PM
Calcium	16000	130		mg/Kg	5	11/23/2004 4:55:16 PM
Chromium	5.8	0.30		mg/Kg	1	11/23/2004 12:20:55 PM
Lead	5.7	0.25		mg/Kg	1	11/23/2004 12:20:55 PM
Magnesium	4600	25		mg/Kg	1	11/23/2004 12:20:55 PM
Potassium	1300	50		mg/Kg	1	11/23/2004 12:20:55 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 12:20:55 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 12:20:55 PM
Sodium	1300	25		mg/Kg	1	11/23/2004 12:20:55 PM
EPA METHOD 150.1: PH						Analyst: CMC
pH	9.23	0.010		pH Units	1	12/1/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level 3 / 23

Hall Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co

Client Sample ID: RR-S-1

Lab Order: 0411218

Collection Date: 11/18/2004 8:30:00 AM

Project: Railroad Rack Lagoon SWMU

Lab ID: 0411218-03

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: MAP
Fluoride	4.6	3.0		mg/Kg	10	11/30/2004 12:22:06 PM
Chloride	27	3.0		mg/Kg	10	11/30/2004 12:22:06 PM
Nitrogen, Nitrate (As N)	ND	3.0		mg/Kg	10	11/30/2004 12:22:06 PM
Sulfate	28	15		mg/Kg	10	11/30/2004 12:22:06 PM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 12:22:06 PM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 12:22:06 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	31	10		mg/Kg	1	11/22/2004 8:57:58 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/22/2004 8:57:58 PM
Surr: DNOP	94.8	60-124		%REC	1	11/22/2004 8:57:58 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/23/2004 4:37:38 PM
Benzene	ND	0.025		mg/Kg	1	11/23/2004 4:37:38 PM
Toluene	ND	0.025		mg/Kg	1	11/23/2004 4:37:38 PM
Ethylbenzene	ND	0.025		mg/Kg	1	11/23/2004 4:37:38 PM
Xylenes, Total	0.082	0.025		mg/Kg	1	11/23/2004 4:37:38 PM
Surr: 4-Bromofluorobenzene	104	74-118		%REC	1	11/23/2004 4:37:38 PM
EPA METHOD 7471: MERCURY						Analyst: CMC
Mercury	ND	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						Analyst: CMC
Arsenic	ND	2.5		mg/Kg	1	11/23/2004 12:29:00 PM
Barium	300	0.96		mg/Kg	10	11/24/2004 4:34:44 PM
Cadmium	ND	0.10		mg/Kg	1	11/23/2004 12:29:00 PM
Calcium	17000	250		mg/Kg	10	11/23/2004 5:02:14 PM
Chromium	5.6	0.30		mg/Kg	1	11/23/2004 12:29:00 PM
Lead	5.1	0.25		mg/Kg	1	11/23/2004 12:29:00 PM
Magnesium	4400	25		mg/Kg	1	11/23/2004 12:29:00 PM
Potassium	1400	50		mg/Kg	1	11/23/2004 12:29:00 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 12:29:00 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 12:29:00 PM
Sodium	870	25		mg/Kg	1	11/23/2004 12:29:00 PM
EPA METHOD 150.1: PH						Analyst: CMC
pH	9.05	0.010		pH Units	1	12/1/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level 4 / 23

Page 3 of 13

Full Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0411218
Project: Railroad Rack Lagoon SWMU
Lab ID: 0411218-04

Client Sample ID: RR-W-1
Collection Date: 11/18/2004 8:45:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						
						Analyst: MAP
Fluoride	4.6	3.0		mg/Kg	10	11/30/2004 12:38:53 PM
Chloride	37	3.0		mg/Kg	10	11/30/2004 12:38:53 PM
Nitrogen, Nitrate (As N)	ND	3.0		mg/Kg	10	11/30/2004 12:38:53 PM
Sulfate	ND	15		mg/Kg	10	11/30/2004 12:38:53 PM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 12:38:53 PM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 12:38:53 PM
EPA METHOD 8015B: DIESEL RANGE						
						Analyst: JMP
Diesel Range Organics (DRO)	12	10		mg/Kg	1	11/22/2004 9:29:35 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/22/2004 9:29:35 PM
Surr: DNOP	95.9	60-124		%REC	1	11/22/2004 9:29:35 PM
EPA METHOD 8021B: VOLATILES						
						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/23/2004 5:07:40 PM
Benzene	ND	0.025		mg/Kg	1	11/23/2004 5:07:40 PM
Toluene	ND	0.025		mg/Kg	1	11/23/2004 5:07:40 PM
Ethylbenzene	ND	0.025		mg/Kg	1	11/23/2004 5:07:40 PM
Xylenes, Total	ND	0.025		mg/Kg	1	11/23/2004 5:07:40 PM
Surr: 4-Bromofluorobenzene	103	74-118		%REC	1	11/23/2004 5:07:40 PM
EPA METHOD 7471: MERCURY						
						Analyst: CMC
Mercury	ND	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						
						Analyst: CMC
Arsenic	ND	5.0		mg/Kg	2	11/24/2004 2:11:48 PM
Barium	310	0.99		mg/Kg	10	11/24/2004 4:41:39 PM
Cadmium	ND	0.20		mg/Kg	2	11/24/2004 2:11:48 PM
Calcium	16000	50		mg/Kg	2	11/24/2004 2:11:48 PM
Chromium	7.0	0.60		mg/Kg	2	11/24/2004 2:11:48 PM
Lead	7.8	0.50		mg/Kg	2	11/24/2004 2:11:48 PM
Magnesium	4800	50		mg/Kg	2	11/24/2004 2:11:48 PM
Potassium	1300	100		mg/Kg	2	11/24/2004 2:11:48 PM
Selenium	ND	5.0		mg/Kg	2	11/24/2004 2:11:48 PM
Silver	ND	0.50		mg/Kg	2	11/24/2004 2:11:48 PM
Sodium	1300	50		mg/Kg	2	11/24/2004 2:11:48 PM
EPA METHOD 150.1: PH						
						Analyst: CMC
pH	9.13	0.010		pH Units	1	12/1/2004

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 5 / 23

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Wall Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0411218
Project: Railroad Rack Lagoon SWMU
Lab ID: 0411218-05

Client Sample ID: RR-N-1-Wall
Collection Date: 11/18/2004 9:00:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: MAP
Fluoride	3.4	3.0		mg/Kg	10	11/30/2004 12:55:42 PM
Chloride	300	3.0		mg/Kg	10	11/30/2004 12:55:42 PM
Nitrogen, Nitrate (As N)	ND	3.0		mg/Kg	10	11/30/2004 12:55:42 PM
Sulfate	610	15		mg/Kg	10	11/30/2004 12:55:42 PM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 12:55:42 PM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 12:55:42 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/22/2004 10:01:18 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/22/2004 10:01:18 PM
Surr: DNOP	97.8	60-124		%REC	1	11/22/2004 10:01:18 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/23/2004 5:37:45 PM
Benzene	ND	0.025		mg/Kg	1	11/23/2004 5:37:45 PM
Toluene	ND	0.025		mg/Kg	1	11/23/2004 5:37:45 PM
Ethylbenzene	ND	0.025		mg/Kg	1	11/23/2004 5:37:45 PM
Xylenes, Total	ND	0.025		mg/Kg	1	11/23/2004 5:37:45 PM
Surr: 4-Bromofluorobenzene	100	74-118		%REC	1	11/23/2004 5:37:45 PM
EPA METHOD 7471: MERCURY						Analyst: CMC
Mercury	ND	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						Analyst: CMC
Arsenic	ND	2.5		mg/Kg	1	11/23/2004 12:40:59 PM
Barium	280	1.0		mg/Kg	10	11/24/2004 4:43:49 PM
Cadmium	ND	0.10		mg/Kg	1	11/23/2004 12:40:59 PM
Calcium	18000	250		mg/Kg	10	11/23/2004 5:18:23 PM
Chromium	7.6	0.30		mg/Kg	1	11/23/2004 12:40:59 PM
Lead	5.3	0.25		mg/Kg	1	11/23/2004 12:40:59 PM
Magnesium	5800	25		mg/Kg	1	11/23/2004 12:40:59 PM
Potassium	2700	50		mg/Kg	1	11/23/2004 12:40:59 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 12:40:59 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 12:40:59 PM
Sodium	1500	25		mg/Kg	1	11/23/2004 12:40:59 PM
EPA METHOD 150.1: PH						Analyst: CMC
pH	8.37	0.010		pH Units	1	12/1/2004

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

Wall Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co

Client Sample ID: RR-S-1-Wall

Lab Order: 0411218

Collection Date: 11/18/2004 9:15:00 AM

Project: Railroad Rack Lagoon SWMU

Lab ID: 0411218-06

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: MAP
Fluoride	4.7	3.0		mg/Kg	10	11/30/2004 1:12:30 PM
Chloride	76	3.0		mg/Kg	10	11/30/2004 1:12:30 PM
Nitrogen, Nitrate (As N)	ND	3.0		mg/Kg	10	11/30/2004 1:12:30 PM
Sulfate	380	15		mg/Kg	10	11/30/2004 1:12:30 PM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 1:12:30 PM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 1:12:30 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/22/2004 10:34:12 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/22/2004 10:34:12 PM
Surr: DNOP	81.5	60-124		%REC	1	11/22/2004 10:34:12 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/23/2004 6:07:55 PM
Benzene	ND	0.025		mg/Kg	1	11/23/2004 6:07:55 PM
Toluene	ND	0.025		mg/Kg	1	11/23/2004 6:07:55 PM
Ethylbenzene	ND	0.025		mg/Kg	1	11/23/2004 6:07:55 PM
Xylenes, Total	ND	0.025		mg/Kg	1	11/23/2004 6:07:55 PM
Surr: 4-Bromofluorobenzene	104	74-118		%REC	1	11/23/2004 6:07:55 PM
EPA METHOD 7471: MERCURY						Analyst: CMC
Mercury	ND	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						Analyst: CMC
Arsenic	ND	2.5		mg/Kg	1	11/23/2004 12:49:06 PM
Barium	300	0.97		mg/Kg	10	11/24/2004 4:45:57 PM
Cadmium	ND	0.10		mg/Kg	1	11/23/2004 12:49:06 PM
Calcium	17000	250		mg/Kg	10	11/23/2004 5:21:12 PM
Chromium	6.9	0.30		mg/Kg	1	11/23/2004 12:49:06 PM
Lead	5.9	0.25		mg/Kg	1	11/23/2004 12:49:06 PM
Magnesium	5400	25		mg/Kg	1	11/23/2004 12:49:06 PM
Potassium	2000	50		mg/Kg	1	11/23/2004 12:49:06 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 12:49:06 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 12:49:06 PM
Sodium	1000	25		mg/Kg	1	11/23/2004 12:49:06 PM
EPA METHOD 150.1: PH						Analyst: CMC
pH	8.55	0.010		pH Units	1	12/1/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

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Wall Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0411218
Project: Railroad Rack Lagoon SWMU
Lab ID: 0411218-07

Client Sample ID: RR-E-1-Wall N
Collection Date: 11/18/2004 9:30:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: MAP
Fluoride	36	3.0		mg/Kg	10	11/30/2004 2:02:56 PM
Chloride	76	3.0		mg/Kg	10	11/30/2004 2:02:56 PM
Nitrogen, Nitrate (As N)	6.6	3.0		mg/Kg	10	11/30/2004 2:02:56 PM
Sulfate	270	15		mg/Kg	10	11/30/2004 2:02:56 PM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 2:02:56 PM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 2:02:56 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	150	10		mg/Kg	1	11/23/2004 12:46:34 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/23/2004 12:46:34 PM
Surr: DNOP	110	60-124		%REC	1	11/23/2004 12:46:34 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/23/2004 6:37:48 PM
Benzene	ND	0.025		mg/Kg	1	11/23/2004 6:37:48 PM
Toluene	ND	0.025		mg/Kg	1	11/23/2004 6:37:48 PM
Ethylbenzene	ND	0.025		mg/Kg	1	11/23/2004 6:37:48 PM
Xylenes, Total	ND	0.025		mg/Kg	1	11/23/2004 6:37:48 PM
Surr: 4-Bromofluorobenzene	99.7	74-118		%REC	1	11/23/2004 6:37:48 PM
EPA METHOD 7471: MERCURY						Analyst: CMC
Mercury	ND	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						Analyst: CMC
Arsenic	ND	2.5		mg/Kg	1	11/23/2004 3:28:41 PM
Barium	260	0.96		mg/Kg	10	11/24/2004 4:48:09 PM
Cadmium	ND	0.10		mg/Kg	1	11/23/2004 3:28:41 PM
Calcium	15000	130		mg/Kg	5	11/23/2004 5:24:02 PM
Chromium	6.3	0.30		mg/Kg	1	11/23/2004 3:28:41 PM
Lead	6.2	0.25		mg/Kg	1	11/23/2004 3:28:41 PM
Magnesium	4600	25		mg/Kg	1	11/23/2004 3:28:41 PM
Potassium	1700	50		mg/Kg	1	11/23/2004 3:28:41 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 3:28:41 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 3:28:41 PM
Sodium	1200	25		mg/Kg	1	11/23/2004 3:28:41 PM
EPA METHOD 150.1: PH						Analyst: CMC
pH	8.58	0.010		pH Units	1	12/1/2004

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

Hall Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0411218
Project: Railroad Rack Lagoon SWMU
Lab ID: 0411218-09

Client Sample ID: RR-W-1-Wall N
Collection Date: 11/18/2004 10:45:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: MAP
Fluoride	14	1.5		mg/Kg	5	11/30/2004 2:19:45 PM
Chloride	290	1.5		mg/Kg	5	11/30/2004 2:19:45 PM
Nitrogen, Nitrate (As N)	4.3	1.5		mg/Kg	5	11/30/2004 2:19:45 PM
Sulfate	860	7.5		mg/Kg	5	11/30/2004 2:19:45 PM
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	11/30/2004 2:19:45 PM
Phosphorus, Orthophosphate (As P)	ND	7.5		mg/Kg	5	11/30/2004 2:19:45 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	450	10		mg/Kg	1	11/23/2004 1:18:13 PM
Motor Oil Range Organics (MRO)	140	50		mg/Kg	1	11/23/2004 1:18:13 PM
Surr: DNOP	87.4	60-124		%REC	1	11/23/2004 1:18:13 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/23/2004 7:07:39 PM
Benzene	ND	0.025		mg/Kg	1	11/23/2004 7:07:39 PM
Toluene	ND	0.025		mg/Kg	1	11/23/2004 7:07:39 PM
Ethylbenzene	ND	0.025		mg/Kg	1	11/23/2004 7:07:39 PM
Xylenes, Total	ND	0.025		mg/Kg	1	11/23/2004 7:07:39 PM
Surr: 4-Bromofluorobenzene	101	74-118		%REC	1	11/23/2004 7:07:39 PM
EPA METHOD 7471: MERCURY						Analyst: CMC
Mercury	0.037	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						Analyst: CMC
Arsenic	ND	2.5		mg/Kg	1	11/23/2004 3:32:35 PM
Barium	460	1.0		mg/Kg	10	11/24/2004 4:50:16 PM
Cadmium	ND	0.10		mg/Kg	1	11/23/2004 3:32:35 PM
Calcium	32000	250		mg/Kg	10	11/23/2004 5:27:54 PM
Chromium	27	0.30		mg/Kg	1	11/23/2004 3:32:35 PM
Lead	11	0.25		mg/Kg	1	11/23/2004 3:32:35 PM
Magnesium	4300	25		mg/Kg	1	11/23/2004 3:32:35 PM
Potassium	1200	50		mg/Kg	1	11/23/2004 3:32:35 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 3:32:35 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 3:32:35 PM
Sodium	1100	25		mg/Kg	1	11/23/2004 3:32:35 PM
EPA METHOD 150.1: PH						Analyst: CMC
pH	8.21	0.010		pH Units	1	12/1/2004

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

Wall Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0411218
Project: Railroad Rack Lagoon SWMU
Lab ID: 0411218-10

Client Sample ID: RR-W-1-Wall S
Collection Date: 11/18/2004 11:00:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						
						Analyst: MAP
Fluoride	7.9	3.0		mg/Kg	10	11/30/2004 4:00:30 PM
Chloride	33	3.0		mg/Kg	10	11/30/2004 4:00:30 PM
Nitrogen, Nitrate (As N)	ND	3.0		mg/Kg	10	11/30/2004 4:00:30 PM
Sulfate	39	15		mg/Kg	10	11/30/2004 4:00:30 PM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 4:00:30 PM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 4:00:30 PM
EPA METHOD 8015B: DIESEL RANGE						
						Analyst: JMP
Diesel Range Organics (DRO)	310	10		mg/Kg	1	11/23/2004 6:44:57 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/23/2004 6:44:57 AM
Surr: DNOP	111	60-124		%REC	1	11/23/2004 6:44:57 AM
EPA METHOD 8021B: VOLATILES						
						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	1.0		mg/Kg	10	11/23/2004 7:37:29 PM
Benzene	ND	0.25		mg/Kg	10	11/23/2004 7:37:29 PM
Toluene	ND	0.25		mg/Kg	10	11/23/2004 7:37:29 PM
Ethylbenzene	ND	0.25		mg/Kg	10	11/23/2004 7:37:29 PM
Xylenes, Total	ND	0.25		mg/Kg	10	11/23/2004 7:37:29 PM
Surr: 4-Bromofluorobenzene	104	74-118		%REC	10	11/23/2004 7:37:29 PM
EPA METHOD 7471: MERCURY						
						Analyst: CMC
Mercury	ND	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						
						Analyst: CMC
Arsenic	ND	2.5		mg/Kg	1	11/23/2004 3:40:28 PM
Barium	320	0.96		mg/Kg	10	11/24/2004 4:52:24 PM
Cadmium	ND	0.10		mg/Kg	1	11/23/2004 3:40:28 PM
Calcium	17000	250		mg/Kg	10	11/23/2004 5:30:43 PM
Chromium	3.1	0.30		mg/Kg	1	11/23/2004 3:40:28 PM
Lead	2.9	0.25		mg/Kg	1	11/23/2004 3:40:28 PM
Magnesium	4200	25		mg/Kg	1	11/23/2004 3:40:28 PM
Potassium	1000	50		mg/Kg	1	11/23/2004 3:40:28 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 3:40:28 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 3:40:28 PM
Sodium	920	25		mg/Kg	1	11/23/2004 3:40:28 PM
EPA METHOD 150.1: PH						
						Analyst: CMC
pH	8.89	0.010		pH Units	1	12/1/2004

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Hall Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0411218
Project: Railroad Rack Lagoon SWMU
Lab ID: 0411218-11

Client Sample ID: RR-B-1
Collection Date: 11/18/2004 11:30:00 AM
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						
						Analyst: MAP
Fluoride	4.5	3.0		mg/Kg	10	11/30/2004 4:17:19 PM
Chloride	34	3.0		mg/Kg	10	11/30/2004 4:17:19 PM
Nitrogen, Nitrate (As N)	ND	3.0		mg/Kg	10	11/30/2004 4:17:19 PM
Sulfate	ND	15		mg/Kg	10	11/30/2004 4:17:19 PM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 4:17:19 PM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 4:17:19 PM
EPA METHOD 8015B: DIESEL RANGE						
						Analyst: JMP
Diesel Range Organics (DRO)	99	10		mg/Kg	1	11/23/2004 7:18:07 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/23/2004 7:18:07 AM
Surr: DNOP	89.5	60-124		%REC	1	11/23/2004 7:18:07 AM
EPA METHOD 8021B: VOLATILES						
						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.50		mg/Kg	5	11/23/2004 8:07:19 PM
Benzene	ND	0.13		mg/Kg	5	11/23/2004 8:07:19 PM
Toluene	ND	0.13		mg/Kg	5	11/23/2004 8:07:19 PM
Ethylbenzene	ND	0.13		mg/Kg	5	11/23/2004 8:07:19 PM
Xylenes, Total	0.52	0.13		mg/Kg	5	11/23/2004 8:07:19 PM
Surr: 4-Bromofluorobenzene	103	74-118		%REC	5	11/23/2004 8:07:19 PM
EPA METHOD 7471: MERCURY						
						Analyst: CMC
Mercury	ND	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						
						Analyst: CMC
Arsenic	ND	2.5		mg/Kg	1	11/23/2004 3:44:35 PM
Barium	260	1.0		mg/Kg	10	11/24/2004 4:54:36 PM
Cadmium	ND	0.10		mg/Kg	1	11/23/2004 3:44:35 PM
Calcium	15000	130		mg/Kg	5	11/23/2004 5:33:33 PM
Chromium	5.9	0.30		mg/Kg	1	11/23/2004 3:44:35 PM
Lead	5.6	0.25		mg/Kg	1	11/23/2004 3:44:35 PM
Magnesium	4600	25		mg/Kg	1	11/23/2004 3:44:35 PM
Potassium	1300	50		mg/Kg	1	11/23/2004 3:44:35 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 3:44:35 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 3:44:35 PM
Sodium	1400	25		mg/Kg	1	11/23/2004 3:44:35 PM
EPA METHOD 150.1: PH						
						Analyst: CMC
pH	9.06	0.010		pH Units	1	12/1/2004

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

Hall Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0411218
Project: Railroad Rack Lagoon SWMU
Lab ID: 0411218-12

Client Sample ID: RR-B-2
Collection Date: 11/18/2004 12:30:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: MAP
Fluoride	7.5	3.0		mg/Kg	10	11/30/2004 4:34:08 PM
Chloride	17	3.0		mg/Kg	10	11/30/2004 4:34:08 PM
Nitrogen, Nitrate (As N)	ND	3.0		mg/Kg	10	11/30/2004 4:34:08 PM
Sulfate	680	15		mg/Kg	10	11/30/2004 4:34:08 PM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 4:34:08 PM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 4:34:08 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/23/2004 7:49:46 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/23/2004 7:49:46 AM
Surr: DNOP	88.7	60-124		%REC	1	11/23/2004 7:49:46 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	0.10		mg/Kg	1	11/24/2004 11:49:10 PM
Benzene	ND	0.025		mg/Kg	1	11/24/2004 11:49:10 PM
Toluene	ND	0.025		mg/Kg	1	11/24/2004 11:49:10 PM
Ethylbenzene	ND	0.025		mg/Kg	1	11/24/2004 11:49:10 PM
Xylenes, Total	ND	0.025		mg/Kg	1	11/24/2004 11:49:10 PM
Surr: 4-Bromofluorobenzene	102	74-118		%REC	1	11/24/2004 11:49:10 PM
EPA METHOD 7471: MERCURY						Analyst: CMC
Mercury	ND	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						Analyst: CMC
Arsenic	ND	2.5		mg/Kg	1	11/23/2004 3:56:24 PM
Barium	320	0.97		mg/Kg	10	11/24/2004 4:56:47 PM
Cadmium	ND	0.10		mg/Kg	1	11/23/2004 3:56:24 PM
Calcium	17000	250		mg/Kg	10	11/23/2004 5:37:24 PM
Chromium	5.1	0.30		mg/Kg	1	11/23/2004 3:56:24 PM
Lead	5.1	0.25		mg/Kg	1	11/23/2004 3:56:24 PM
Magnesium	4200	25		mg/Kg	1	11/23/2004 3:56:24 PM
Potassium	1000	50		mg/Kg	1	11/23/2004 3:56:24 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 3:56:24 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 3:56:24 PM
Sodium	1300	25		mg/Kg	1	11/23/2004 3:56:24 PM
EPA METHOD 150.1: PH						Analyst: CMC
pH	8.75	0.010		pH Units	1	12/1/2004

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

Hall Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co

Client Sample ID: RR-BP-1

Lab Order: 0411218

Collection Date: 11/18/2004 1:00:00 PM

Project: Railroad Rack Lagoon SWMU

Lab ID: 0411218-13

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: MAP
Fluoride	5.4	3.0		mg/Kg	10	11/30/2004 5:24:33 PM
Chloride	60	3.0		mg/Kg	10	11/30/2004 5:24:33 PM
Nitrogen, Nitrate (As N)	ND	3.0		mg/Kg	10	11/30/2004 5:24:33 PM
Sulfate	ND	15		mg/Kg	10	11/30/2004 5:24:33 PM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 5:24:33 PM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 5:24:33 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	3600	100		mg/Kg	10	11/23/2004 11:40:40 AM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	11/23/2004 11:40:40 AM
Surr: DNOP	83.2	60-124		%REC	10	11/23/2004 11:40:40 AM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	5.0		mg/Kg	50	11/23/2004 9:36:56 PM
Benzene	2.5	1.3		mg/Kg	50	11/23/2004 9:36:56 PM
Toluene	27	1.3		mg/Kg	50	11/23/2004 9:36:56 PM
Ethylbenzene	17	1.3		mg/Kg	50	11/23/2004 9:36:56 PM
Xylenes, Total	110	1.3		mg/Kg	50	11/23/2004 9:36:56 PM
Surr: 4-Bromofluorobenzene	113	74-118		%REC	50	11/23/2004 9:36:56 PM
EPA METHOD 7471: MERCURY						Analyst: CMC
Mercury	0.082	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						Analyst: CMC
Arsenic	ND	2.5		mg/Kg	1	11/23/2004 4:13:16 PM
Barium	240	0.99		mg/Kg	10	11/24/2004 5:01:04 PM
Cadmium	0.10	0.10		mg/Kg	1	11/23/2004 4:13:16 PM
Calcium	16000	130		mg/Kg	5	11/23/2004 5:40:11 PM
Chromium	5.5	0.30		mg/Kg	1	11/23/2004 4:13:16 PM
Lead	12	0.25		mg/Kg	1	11/23/2004 4:13:16 PM
Magnesium	3300	25		mg/Kg	1	11/23/2004 4:13:16 PM
Potassium	1000	50		mg/Kg	1	11/23/2004 4:13:16 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 4:13:16 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 4:13:16 PM
Sodium	590	25		mg/Kg	1	11/23/2004 4:13:16 PM
EPA METHOD 150.1: PH						Analyst: CMC
pH	8.25	0.010		pH Units	1	12/1/2004

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Date: 03-Dec-04

CLIENT: Giant Refining Co
Lab Order: 0411218
Project: Railroad Rack Lagoon SWMU
Lab ID: 0411218-14

Client Sample ID: RR-BP-2
Collection Date: 11/18/2004 1:30:00 PM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 9056A: ANIONS						Analyst: MAP
Fluoride	8.1	3.0		mg/Kg	10	11/30/2004 5:41:22 PM
Chloride	59	3.0		mg/Kg	10	11/30/2004 5:41:22 PM
Nitrogen, Nitrate (As N)	ND	3.0		mg/Kg	10	11/30/2004 5:41:22 PM
Sulfate	24	15		mg/Kg	10	11/30/2004 5:41:22 PM
Nitrogen, Nitrite (As N)	ND	3.0		mg/Kg	10	11/30/2004 5:41:22 PM
Phosphorus, Orthophosphate (As P)	ND	15		mg/Kg	10	11/30/2004 5:41:22 PM
EPA METHOD 8015B: DIESEL RANGE						Analyst: JMP
Diesel Range Organics (DRO)	2700	100		mg/Kg	10	11/29/2004 8:50:00 PM
Motor Oil Range Organics (MRO)	ND	500		mg/Kg	10	11/29/2004 8:50:00 PM
Surr: DNOP	78.9	60-124		%REC	10	11/29/2004 8:50:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Methyl tert-butyl ether (MTBE)	ND	5.0		mg/Kg	50	11/23/2004 10:07:11 PM
Benzene	2.2	1.3		mg/Kg	50	11/23/2004 10:07:11 PM
Toluene	25	1.3		mg/Kg	50	11/23/2004 10:07:11 PM
Ethylbenzene	15	1.3		mg/Kg	50	11/23/2004 10:07:11 PM
Xylenes, Total	100	1.3		mg/Kg	50	11/23/2004 10:07:11 PM
Surr: 4-Bromofluorobenzene	113	74-118		%REC	50	11/23/2004 10:07:11 PM
EPA METHOD 7471: MERCURY						Analyst: CMC
Mercury	ND	0.033		mg/Kg	1	11/30/2004
EPA METHOD 6010C: SOIL METALS						Analyst: NMO
Arsenic	ND	2.5		mg/Kg	1	11/30/2004 2:20:51 PM
Barium	170	0.99		mg/Kg	10	11/24/2004 5:03:13 PM
Cadmium	ND	0.10		mg/Kg	1	11/23/2004 4:17:13 PM
Calcium	13000	130		mg/Kg	5	11/23/2004 5:46:03 PM
Chromium	4.4	0.30		mg/Kg	1	11/23/2004 4:17:13 PM
Lead	7.4	0.25		mg/Kg	1	11/23/2004 4:17:13 PM
Magnesium	3000	25		mg/Kg	1	11/23/2004 4:17:13 PM
Potassium	940	50		mg/Kg	1	11/23/2004 4:17:13 PM
Selenium	ND	2.5		mg/Kg	1	11/23/2004 4:17:13 PM
Silver	ND	0.25		mg/Kg	1	11/23/2004 4:17:13 PM
Sodium	570	25		mg/Kg	1	11/23/2004 4:17:13 PM
EPA METHOD 150.1: PH						Analyst: CMC
pH	8.51	0.010		pH Units	1	12/1/2004

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name GIANTREFIN

Date and Time Received:

Work Order Number 0411218

Received by AT

Checklist completed by

Signature

Date

Matrix

Carrier name Client drop-off

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 ☐

VOA vials have zero headspace?

No VOA vials submitted ☒

Yes ☐

No ☐

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

6°

4° C ± 2 Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345-3975 Fax 505.345.4107
www.hallenvironmental.com

Address: Route 3 Box 7

Project Name: Railroad Rack
Lesson SIMU

Address: Route 3 Box 7

Project #:

Gallup, NM 87301

Project Manager:

Steve Morris

Sampler: *Steve Olson*

Samples Cold?: ☒ Yes ☐ No

Phone #: 505 722 3833

Fax #: 505 722 0210

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative			HEAL No.
					HgCl ₂	HCl		
1/8/04	0800	Soil	RR-N-1	2				041/218
"	0815	"	RR-E-1	2				1
"	0830	"	RR-S-1	2				2
"	0845	"	RR-W-1	2				3
"	0900	"	RR-N-1-Wall	2				4
"	0915	"	RR-S-1-Wall	2				5
"	0930	"	RR-E-1-Wall N	2				6
"	1030	"	RR-E-1-Wall S	2				7
"	1045	"	RR-W-1-Wall N	2				AK
"	1100	"	RR-W-1-Wall S	2				8
"	1130	"	RR-B-1	2				9
"	1230	"	RR-B-2	2				10
"		"						11
"		"						12

Date: _____ Time: _____ Relinquished By: (Signature) _____

Relinquished By: (Signature) 

Received By: (Signature)

2011/9/01

Date:	Time:	Relinquished By: (Signature)
-------	-------	------------------------------

Received By: (Signature)

1340

ANALYSIS REQUEST

[illegible]

Remarks:

Gen Chem = Cations, Anions,
and Mol pH

per S.M delete PLE-1-Walls B 11/19/201

**CINIZA REFINERY
OCD DISCHARGE PLAN GW-032
WEEKLY POND INSPECTION**

DATE: 8/3/04

INSPECTED BY: Damon A. Jee

POND #	FREEBOARD	DIKE CONDITION	IMMEDIATE ACTION NEEDED?
1	<u>OK</u>	<u>OK</u>	<u>none</u>
2	<u>OK</u>	<u>OK</u>	
3	<u>OK</u>	<u>OK</u>	
4	<u>OK</u>	<u>OK</u>	
5	<u>OK</u>	<u>OK</u>	
6a	<u>OK</u>	<u>OK</u>	
6b	<u>OK</u>	<u>OK</u>	
7	<u>OK</u>	<u>OK</u>	
8	<u>OK</u>	<u>OK</u>	
9a	<u>OK</u>	<u>OK</u>	
9b	<u>OK</u>	<u>OK</u>	
9c	<u>OK</u>	<u>OK</u>	
9d	<u>OK</u>	<u>OK</u>	
11	<u>OK</u>	<u>OK</u>	
12a	<u>OK</u>	<u>OK</u>	
12b	<u>OK</u>	<u>OK</u>	

COMMENTS: _____

Check all ponds weekly for dike condition and freeboards. Check also for unusual flow from or into the ponds.

CINIZA REFINERY
OCD DISCHARGE PLAN GW-032
WEEKLY POND INSPECTION

DATE: 12/29/04

INSPECTED BY: Danuta J. J.

POND #	FREEBOARD	DIKE CONDITION	IMMEDIATE ACTION NEEDED?
1	OK	OK	None
2	OK	OK	
3	OK	OK	
4	OK	OK	
5	OK	OK	
6a	OK	OK	
6b	OK	OK	
7	OK	OK	
8	OK	OK	
9a	OK	OK	
9b	OK	OK	
9c	OK	OK	
9d	OK	OK	
11	OK	OK	
12a	OK	OK	
12b	OK	OK	

COMMENTS: _____

Check all ponds weekly for dike condition and freeboards. Check also for unusual flow from or into the ponds.

**PERMIT CONDITION 21. ANNUAL REPORT
A. SUMMARY OF ALL MAJOR ACTIVITIES**

Permit Condition 21. Annual Report

A. Summary Of All Major Refinery Activities Or Events

February- On February 11, the NMED conducted a hazardous waste Compliance Evaluation Inspection. Two violations were noted:

1. Failure to close 2 fiber drums of universal waste lamps.
2. Failure to maintain a satellite drum of paint waste under control of operator.

NMED determined that these violations have been adequately addressed and no further action is required.

April- On April 8, an explosion in the alkylation unit of the refinery started a fire that consumed LPGs and gasoline from the iso-stripper vessel in this unit and LPGs were vented to the flare. The fire also consumed the light cat gasoline in the gas con unit and light cat gas was depressured to the flare. Corrective measures included: firefighting activities were initiated including cooling of adjacent equipment; immediate shutdown of alky and gas con units including feed to the units; depressuring valves off overhead receivers were activated.

Giant submitted a work plan that was approved by OCD to address environmental impacts. No freshwater wells or watercourses were impacted. Stormwater samples were taken and chloride levels ranging from 6500 to 7900 were the only constituents of concern.

June- The topsoil layer of the NW temporary evaporation ponds was removed and used as dike material to repair erosion on dike between pond 5 and 6. Remediated soil from the Central OCD Landfarm was removed and used to cover the low-lying area on the NW corner of the refinery property where the temporary evaporation ponds were located.

Drilled and completed monitor well BW-3A.

July- The annual HAZWOPER training was received by environmental and emergency response personnel.

Monitor well GWM-1 near the aerations lagoons was drilled and completed. Drilled and completed monitor well BW-3C.

August- The alkylation sewer testing took place. A number of underground laterals and boxes did not hold water and failed. OCD was notified and \$150,000 was allocated in the 2005 budget to replace this system.

Sampling of the newly installed boundry wells took place.

September- Well closures were conducted on OW-2, OW-3, OW-9, and OW-24.

October- The new API oil water separator was completed and placed into service on October 6, 2004. The old API separator was cleaned, repaired and placed into stormwater only service.

Well closures were conducted on SMW-1, SMW-3, SMW-5 and OW-7.

November- Work began on cleanup of the SWMU at the RR Rack Lagoon. Fuhs Trucking removed contaminated soils from the lagoon and placed onto the Central OCD Landfarm.

Ed Rios replaced Matt Davis as the refinery manager.

December- The annual groundwater sampling event of all of the Ciniza monitor wells was completed.

The annual SPCC self audit inspection was completed.

The annual Stormwater Pollution Prevention Plan self audit inspection was performed.

Bimonthly refinery property perimeter inspections were started.

PERMIT CONDITION 21. ANNUAL REPORT

C. WASTE WATER SUMMARY

2004 WASTE WATER SUMMARY

TRAVEL CENTER TO PONDS				TOTAL FLOW TO PONDS				RAIN GAUGE INCHES	FREEBOARD AT PONDS											Comments
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM			6	12B	2	9	12A	3	7	4	8	5	11	
12/29/04	38	2	7.16	34	5	123	-		24	1	1.25	BM	2	2.25	BM	2.5	BM	2.92		
12/29/04	40	2	7.16	38	5	123	0.2		24	1	1.25	BM	2.25	2.25	BM	2.5	BM	2.92		
12/22/04	38	2	7.16	34	5	123	-		24	1	1.25	BM	2.25	2	BM	2.33	BM	2.83	2.92	
12/21/04	36	2	7.16	32	5	123	-		24	1	1.25	BM	2.25	2	BM	2.33	BM	2.83	2.92	
12/20/04	36	2	7.16	32	5	123	0		24	1	1.25	BM	2.25	2	BM	2.33	BM	2.83	2.92	
12/16/04	38	2	7.16	34	5	123	0		24	1	1.25	BM	2.33	1.83	BM	2	BM	2.5	2.33	
12/15/04	36	2	7.16	34	5	123	0		24	1	1.25	BM	2.33	1.83	BM	2	BM	2.5	2.33	
12/14/04	36	2	7.16	34	5	123	0		24	1	1.25	BM	2.33	1.83	BM	2	BM	2.5	2.33	
12/13/04	38	2	7.16	34	5	123	0		24	1	1.25	BM	2.33	1.83	BM	2	BM	2.5	2.33	
12/7/04	36	2	7.16	34	5	123	0		24	1.25	1.25	BM	1.67	BM	1.83	BM	2.5	2.5		
12/6/04	40	2	7.16	36	6	193	Trace		24	1.25	1.25	BM	BM	1.67	BM	1.83	BM	2.5	2.5	
12/2/04	38	2	7.16	34	5	123	0		24	1.33	1.25	BM	2.5	1.5	BM	1.75	BM	2.33	2.83	
11/29/04	36	2	7.16	34	5	123	0.3		24	1.33	1.25	BM	2.5	1.5	BM	1.75	BM	2.33	2.83	
11/24/04	40	2	7.16	38	5	123	0		24	1.33	1.25	BM	2.5	1.5	BM	1.75	BM	2.33	2.83	
11/23/04	40	2	7.16	38	5	123	Trace		24	1.33	1.25	BM	2.5	1.5	BM	1.75	BM	2.33	2.83	
11/22/04	42	2	7.16	40	5	123	0.1		24	1.33	1.25	BM	2.5	1.5	BM	1.75	BM	2.33	2.83	
11/18/04	44	2	7.16	40	5	123	0		24	1	1.25	BM	2.5	1.5	BM	1.75	BM	2.75	2.83	
11/17/04	40	2	7.16	38	5	123	0		24	1	1.25	BM	2.5	1.75	BM	2	BM	2.83	2.83	
11/16/04	42	2	7.16	38	5	123	0		24	1	1.25	BM	2.5	1.75	BM	2	BM	2.83	2.83	
11/15/04	44	2	7.16	40	5	123	0.1		24	1	1.25	BM	2.5	1.75	DRY	2	BM	2.83	2.83	
11/11/04	40	2	7.16	38	5	123	0		24	1	1.25	BM	2.5	1.75	DRY	2	BM	2.83	2.83	
11/10/04	44	2	7.16	40	5	123	0		24	1	1.25	BM	2.5	2	DRY	2	BM	2.83	3	
11/9/04	42	2	7.16	40	6	193	0.31		24	1	1.25	BM	2.5	2	DRY	2	BM	2.83	3	
11/8/04	46	2	7.16	44	5	123	0		24	1	1.25	BM	2.5	2	DRY	2	BM	2.83	3	
11/4/04	40	2	7.16	38	5	123	0		24	1	1.25	BM	2.5	2	DRY	2	BM	2.83	3	
11/3/04	40	2	7.16	38	5	123	0		24	1	1.25	BM	2.5	2	DRY	2	BM	2.83	3	
11/2/04	40	2	7.16	38	5	123	0		24	1	1.25	BM	2.5	2	DRY	2	BM	2.83	3	
11/1/04	44	2	7.16	40	5	123	0.4		24	1	1.25	BM	2.5	2	DRY	2	BM	2.83	3	
10/28/04	48	2	7.16	46	5	123	0		24	1	1.25	BM	BM	1.83	DRY	1.92	BM	2.67	BM	
10/27/04	48	2	7.16	44	5	123	0		24	1.25	1.25	BM	BM	1.83	DRY	1.92	BM	2.67	BM	
10/26/04	48	2	7.16	44	5	123	0		24	1.17	1.25	BM	3	1.83	DRY	1.92	BM	2.67	3.25	
10/25/04	48	2	7.16	46	5	123	0		24	1.25	1.25	BM	BM	1.83	DRY	1.92	BM	2.67	BM	
10/21/04	48	2	7.16	44	5	123	0		24	1.25	1.25	BM	BM	1.75	DRY	1.83	BM	2.5	BM	
10/20/04	48	2	7.16	44	5	123	0		24	1.25	1.25	BM	BM	1.75	DRY	1.83	BM	2.5	BM	

2004 WASTE WATER SUMMARY

TRAVEL CENTER TO PONDS				TOTAL FLOW TO PONDS				RAIN GAUGE INCHES	FREEBOARD AT PONDS											Comments
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM			6	12B	2	9	12A	3	7	4	8	5	11	
10/19/04	46	2	7.16	42	5	123	0	0	24	1.5	1.25	BM	BM	1.5	DRY	1.58	BM	2.5	BM	
10/18/04	46	2	7.16	42	5	123	0	0	24	1.5	1.25	BM	BM	1.5	DRY	1.58	BM	2.5	BM	
10/14/04	-	-	-	40	5	123	0.1	0.1	24	1.5	1.25	BM	BM	1.42	DRY	1.58	BM	2.5	BM	
10/13/04	44	2	7.16	40	5	123	0	0	24	1.5	1.25	BM	BM	1.42	DRY	1.58	BM	2.5	BM	
10/12/04	-	-	-	44	5	123	0.1	0.1	24	1.5	1.25	BM	BM	1.5	DRY	1.67	BM	BM	BM	
10/11/04	48	2	7.16	46	5	123	0.15	0.15	24	1.5	1.25	BM	BM	1.5	DRY	1.67	BM	BM	BM	
10/7/04	48	2	7.16	46	5	123	0	0	24	1.25	1.25	BM	2.33	2	DRY	2.67	BM	BM	BM	
10/6/04	48	2	7.16	44	5	123	0	0	24	1	1.25	BM	2.33	2.67	DRY	2.83	BM	BM	BM	
10/5/04	50	2	7.16	48	5	123	-	-	24	1	1.25	BM	2.33	2.67	DRY	2.83	BM	BM	BM	
10/4/04	50	2	7.16	48	5.5	156	0.2	0.2	24	1	1.25	BM	2.33	2.67	DRY	2.83	BM	BM	BM	
9/30/04	50	2	7.16	48	5.5	156	0.5	0.5	24	1	1.25	BM	2.5	2.67	DRY	2.67	BM	BM	BM	
9/29/04	52	2	7.16	48	5	123	0.1	0.1	24	1	1.25	BM	2.5	2.67	DRY	2.67	BM	BM	BM	
9/28/04	52	2	7.16	48	5	123	0	0	24	1	1.25	BM	2.5	2.67	DRY	2.67	BM	BM	BM	
9/27/04	52	2	7.16	50	5	123	0.5	0.5	24	1	1.25	BM	2.5	2.67	DRY	2.67	BM	BM	BM	
9/23/04	54	1	1.27	50	4.5	94.2	0	0	24	1	1.25	BM	2.5	2.67	DRY	2.67	BM	BM	BM	
9/22/04	54	2	7.16	50	4.5	94.2	0	0	24	1	1.25	BM	2.5	2.67	DRY	2.67	BM	BM	BM	
9/21/04	54	2	7.16	50	4.5	94.2	-	-	24	1	1.25	BM	2.5	2.67	DRY	2.67	BM	BM	BM	
9/20/04	53	1	1.27	50	4.5	94.2	0.2	0.2	24	1	1.25	BM	2.5	2.67	DRY	2.67	BM	BM	BM	
9/16/04	56	2	7.16	52	5	123	0	0	18	1	1.25	BM	2.33	2.5	DRY	2.67	BM	2.83	BM	
9/15/04	56	2	7.16	52	5.5	156	0	0	18	1	1.25	BM	2.33	2.5	DRY	2.67	BM	2.83	BM	
9/14/04	56	2	7.16	52	5	123	0	0	18	1	1.25	BM	2.33	2.5	DRY	2.67	BM	2.83	BM	
9/13/04	58	2	7.16	54	5	123	0	0	18	1	1.25	BM	2.33	2.5	DRY	2.67	BM	2.83	BM	
9/10/04	54	2	7.16	52	5.5	156	0	0	18	1	1.25	BM	2	2	DRY	2	BM	2.67	BM	
9/9/04	54	2	7.16	50	5.5	156	0	0	18	1	1.25	BM	2	2	DRY	2	BM	2.67	BM	
9/8/2004	56	2	7.16	52	5.5	156	0	0	18	1	1.25	BM	2	2	DRY	2	BM	2.67	BM	
9/7/2004	56	2	7.16	53	6	193	0.3	0.3	18	1.17	1.25	BM	2	2	DRY	2	BM	2.67	BM	
9/2/2004	56	2	7.16	54	4.5	94.2	-	-	18	1.17	1.25	BM	2	2	DRY	2	BM	2.67	BM	
9/1/2004	54	2	7.16	50	4.5	94.2	0	0	14	1.33	1.25	BM	1.83	2	DRY	1.92	BM	2.5	BM	
8/31/04	54	2	7.16	52	5	123	-	-	14	1.33	1.25	BM	1.83	BM	1.92	BM	2.5	BM	BM	
8/30/04	52	1	1.27	50	4.5	94.2	0	0	14	1.17	1.25	BM	1.75	BM	1.83	BM	2.5	BM	BM	
8/27/04	54	1	1.27	50	4.5	94.2	0	0	12	1.17	1.25	BM	1.58	BM	1.75	BM	2.5	BM	BM	
8/26/04	54	1	1.27	52	4.5	94.2	0	0	12	1.17	1.25	BM	1.58	BM	1.75	BM	2.5	BM	BM	
8/25/04	54	2	7.16	52	4.5	94.2	0.2	0.2	12	1.17	1.25	BM	1.58	BM	1.75	BM	2.5	BM	BM	
8/24/04	58	2	7.16	56	5	123	0	0	12	1.17	1.25	BM	1.58	BM	1.75	BM	2	BM	BM	

2004 WASTE WATER SUMMARY

TRAVEL CENTER TO PONDS				TOTAL FLOW TO PONDS				RAIN GAUGE INCHES	FREEBOARD AT PONDS											Comments
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM			6	12B	2	9	12A	3	7	4	8	5	11	
8/23/04	60	1	1.27	56	5	123	trace		in.	feet	feet	feet	feet	feet	feet	feet	feet	feet	feet	
8/20/04	50	2	7.16	46	4.5	94.2	0.4		10	1.17	1.25	BM	BM	1.58	BM	1.75	BM	2.5	BM	
8/19/04	52	2	7.16	46	4.5	94.2	0		10	1.25	1.5	BM	BM	1.58	BM	1.75	BM	2.17	BM	
8/18/04	56	2	7.16	52	4.5	94.2	0		10	1.25	1.33	BM	BM	1.67	BM	1.83	BM	2.25	BM	
8/17/04	56	2	7.16	52	4.5	94.2	0		10	1.17	1.33	BM	BM	1.83	BM	1.92	BM	2.42	BM	
8/16/04	56	1	1.27	52	4.5	94.2	0.2		10	1.17	1.33	BM	BM	1.83	BM	1.92	BM	2.42	BM	
8/12/04	52	1	1.27	48	4.5	94.2	0		10	1.33	1.25	BM	BM	1.75	BM	1.83	BM	2.33	BM	
8/11/04	54	1	1.27	48	4.5	94.2	0		10	1.25	1.25	BM	BM	1.75	BM	1.83	BM	2.33	BM	
8/10/04	54	0	0	48	4.5	94.2	0		10	1.25	1.25	BM	BM	1.75	BM	1.83	BM	2.33	BM	
8/9/04	52	0	0	48	4.5	94.2	0.1		10	1.25	1.25	BM	BM	1.75	BM	1.83	BM	2.33	BM	
7/29/04	52	2	7.16	50	4.5	94.2	0.01		12	1	1.25	BM	BM	1.75	BM	1.83	BM	2.42	BM	
7/28/04	52	1	1.27	48	4.5	94.2	0		12	1	1.25	BM	BM	1.75	BM	1.83	BM	2.42	BM	
7/27/04	50	0	0	48	4.5	94.2	0.02		10	1	1.25	BM	BM	1.67	BM	1.83	BM	2.42	BM	
7/26/04	50	1	1.27	48	5	123	1.5		10	1	1.25	BM	BM	1.67	BM	1.83	BM	2.42	BM	
7/22/04	54	0	0	50	4.5	94.2	0		10	1.25	1.5	BM	BM	1.67	BM	1.83	BM	2.25	BM	
7/21/04	54	1	1.27	50	4.5	94.2	0		10	1.25	1.5	BM	BM	1.67	BM	1.83	BM	2.25	BM	
7/20/04	54	2	7.16	50	4.5	94.2	0		10	1.25	1.5	BM	BM	1.67	BM	1.83	BM	2.25	BM	
7/19/04	52	2	7.16	48	4.5	94.2	0.2		10	1.25	1.5	BM	BM	1.67	BM	1.83	BM	2.25	BM	
7/8/2004	52	-	-	48	4.5	94.2	-		6	1.5	1.5	BM	BM	1.5	BM	1.67	BM	BM	BM	
7/7/2004	-	-	-	-	-	-	0		6	1.5	1.5	BM	BM	1.5	BM	1.67	BM	BM	BM	
7/6/2004	52	-	-	46	4.5	94.2	-		6	1.5	1.5	BM	BM	1.6	BM	1.67	BM	BM	BM	
7/1/2004	-	-	-	48	4.5	94.2	-		10	1.5	1.5	BM	BM	1.5	BM	1.66	BM	BM	BM	
6/30/2004	-	-	-	48	4.5	94.2	1		10	1.5	1.5	BM	BM	1.5	BM	1.75	BM	2.33	BM	
6/29/2004	-	-	-	48	4.5	94.2	trace		10	1.5	1.5	BM	BM	2.33	BM	2.33	BM	2.5	BM	
6/28/2004	-	-	-	48	4.5	94.2	-		10	1.5	1.5	BM	BM	2.33	BM	2.44	BM	2.5	BM	
6/24/2004	-	-	-	50	4.5	94.2	-		10	1.42	1.5	BM	BM	2.5	BM	2.5	BM	BM	BM	
6/23/2004	-	-	-	50	4.5	94.2	-		10	1.42	1.5	BM	BM	2.5	BM	2.5	BM	BM	BM	
6/22/2004	-	-	-	48	4.5	94.2	-		10	1.33	1.5	BM	BM	2.5	BM	2.67	BM	BM	BM	
6/21/2004	-	-	-	50	4.5	94.2	0		10	1.33	1.5	BM	BM	2.5	BM	2.67	BM	BM	BM	
6/17/2004	-	-	-	48	4.5	94.2	0		10	1.25	1.5	BM	BM	2.5	BM	2.83	BM	BM	BM	
6/16/2004	-	-	-	50	4.5	94.2	0		10	1.25	1.5	BM	BM	2.5	BM	2.83	BM	BM	BM	
6/15/2004	-	-	-	-	-	-	-		10	1.25	1.5	BM	BM	2.5	BM	2.83	BM	BM	BM	
6/14/2004	-	-	-	48	4.5	94.2	-		10	1.25	1.5	BM	BM	2.5	BM	2.83	BM	BM	BM	
6/10/2004	-	-	-	48	4.5	94.2	-		8	1.25	1.5	BM	BM	2.5	BM	2.5	BM	BM	BM	

2004 WASTE WATER SUMMARY

TRAVEL CENTER TO PONDS				TOTAL FLOW TO PONDS				RAIN GAUGE INCHES	FREEBOARD AT PONDS											Comments
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM			6	12B	2	9	12A	3	7	4	8	5	11	
6/9/2004	-	-	-	48	4.5	94.2	-	-	8	1.25	1.5	BM	2.5	2.5	BM	2.5	BM	BM	BM	
6/8/2004	-	-	-	48	4.5	94.2	-	-	8	1.25	1.5	BM	2.5	2.5	BM	2.5	BM	BM	BM	
6/7/2004	-	-	-	48	4.5	94.2	-	-	8	1.25	1.5	BM	2.5	2.5	BM	2.5	BM	BM	BM	
6/3/2004	-	-	-	48	4.5	94.2	0	0	8	1.25	1.5	BM	2.5	2.5	BM	2.5	BM	BM	BM	
6/2/2004	-	-	-	46	4.5	94.2	0	0	8	1.25	1.5	BM	2.5	2.5	BM	2.5	BM	BM	BM	
6/1/2004	-	-	-	46	4.5	94.2	0	0	8	1.25	1.5	BM	2.5	2.5	BM	2.5	BM	BM	BM	
5/27/2004	-	-	-	46	4.5	94.2	0	0	8	1.25	1.5	BM	2.25	2.25	BM	2.25	BM	3	BM	
5/26/2004	-	-	-	44	4.5	94.2	0	0	6	1.25	1.5	BM	BM	2	BM	2	BM	3	BM	
5/25/2004	-	-	-	46	4.5	94.2	0	0	6	1.25	1.5	BM	BM	2	BM	2	BM	2	BM	
5/24/2004	-	-	-	44	4.5	94.2	0	0	6	1.25	1.5	BM	BM	2	BM	2	BM	3	BM	
5/20/2004	-	-	-	44	4.5	94.2	0	0	6	1.25	1.5	BM	BM	1.83	BM	1.83	BM	2.67	BM	
5/19/2004	-	-	-	46	4.5	94.2	0	0	6	1.25	1.5	BM	BM	1.83	BM	1.83	BM	2.67	BM	
5/18/2004	-	-	-	48	4.5	94.2	0	0	6	1.25	1.5	BM	BM	1.83	BM	1.83	BM	2.67	BM	
5/17/2004	-	-	-	48	4.5	94.2	0	0	6	1.25	1.5	BM	BM	1.83	BM	1.83	BM	2.67	BM	
5/6/2004	-	-	-	40	4.5	94.2	0	0	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
5/5/2004	-	-	-	36	4.5	94.2	0	0	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
5/4/2004	-	-	-	36	4.5	94.2	0	0	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
5/3/2004	-	-	-	34	4.5	94.2	0	0	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
4/29/2004	-	-	-	34	4.5	94.2	0	0	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
4/28/2004	36	0	0	34	4.5	94.2	0	0	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
4/27/2004	36	1	1.27	32	4.5	94.2	0	0	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
4/26/2004	34	0	0	32	4.5	94.2	0	0	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
4/15/2004	36	2	7.16	32	4.5	94.2	-	-	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
4/14/2004	36	1	1.27	32	4.5	94.2	-	-	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
4/13/2004	34	1	1.27	32	4.5	94.2	-	-	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
4/12/2004	34	0	0	32	4.5	94.2	-	-	6	1.5	1.5	BM	BM	1.67	BM	1.83	BM	2.5	BM	
4/8/2004	36	2	7.16	34	4.5	94.2	0	0	6	1.5	1.5	BM	2.83	1.67	3	1.75	BM	2.5	3	
4/7/2004	36	1	1.27	34	4.5	94.2	0	0	6	1.5	1.55	BM	2.83	1.67	3	1.75	BM	2.5	3	
4/6/2004	36	2	7.16	34	4.5	94.2	0	0	6	1.5	1.5	BM	2.83	1.67	3	1.75	BM	2.5	3	
4/5/2004	36	1	1.27	34	4.5	94.2	2	-	-	-	-	-	-	-	-	-	-	-	-	TOO MUDDY
4/1/2004	36	1	1.27	34	4.5	94.2	0	0	6	1.5	1.5	BM	2.83	1.67	3	1.75	BM	2.5	3	
3/31/2004	36	2	7.16	32	4.5	94.2	0	0	6	1.5	1.5	BM	2.83	1.5	3	1.75	BM	2.5	3	
3/30/2004	34	0	0	32	4.5	94.2	0	0	6	1.5	1.5	BM	2.83	1.5	3	1.75	BM	2.5	3	
3/29/2004	34	1	1.27	32	4.5	94.2	0	0	6	1.5	1.5	BM	2.83	1.5	3	1.75	BM	2.5	3	

2004 WASTE WATER SUMMARY

TRAVEL CENTER TO PONDS				TOTAL FLOW TO PONDS				RAIN GAUGE INCHES	FREEBOARD AT PONDS											Comments
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM			6	12B	2	9	12A	3	7	4	8	5	11	
3/28/2004	34	2	7.16	36	4.5	94.2	0	0	6	1.5	1.5	BM	2.83	1.67	3	1.75	BM	2.5	3	
3/25/2004	34	2	7.16	36	4.5	94.2	0	0	6	1.5	1.5	BM	2.83	1.67	3	1.75	BM	2.5	3	
3/24/2004	34	1	1.27	32	5	123	0.1	0.1	6	1.5	1.5	BM	2.83	1.67	3	1.83	BM	2.5	3	
3/23/2004	38	1	1.27	36	4.5	94.2	0	0	6	1.5	1.5	BM	2.83	1.67	3	1.75	BM	2.5	3	
3/22/2004	38	0	0	36	4.5	94.2	0	0	6	1.5	1.5	BM	2.83	1.67	3	1.75	BM	2.5	3	
3/18/2004	36	2	7.16	34	4.5	94.2	0	0	6	1.16	1.5	BM	2.83	1.5	3	1.67	BM	2.5	3	
3/17/2004	36	1	1.27	32	4.5	94.2	0	0	6	1.16	1.5	BM	2.83	1.5	3	1.67	BM	2.5	3	
3/16/2004	36	2	7.16	32	4.5	94.2	0	0	6	1.16	1.5	BM	2.83	1.5	3	1.67	BM	2.5	3	
3/15/2004	36	2	7.16	32	4.5	94.2	0	0	6	1.25	1.5	BM	2.83	1.5	3	1.67	BM	2.5	3	
3/11/2004	-	-	-	34	5	123	0	0	6	1.67	1.5	BM	2.83	1.5	3	1.83	BM	2.25	2.67	
3/10/2004	-	-	-	34	4.5	94.2	0	0	6	1.67	1.5	BM	2.83	1.5	3	1.83	BM	2.25	2.67	
3/9/2004	-	-	-	34	4.5	94.2	0	0	6	1.67	1.5	BM	2.83	1.5	3	1.83	BM	2.25	2.67	
3/8/2004	-	-	-	34	4.5	94.2	0.2	0.2	6	1.67	1.5	BM	2.83	1.5	3	1.83	BM	2.25	2.67	
3/4/2004	-	-	-	32	5	123	-	-	6	1.67	1.5	BM	2.83	1.5	3	1.83	BM	2.25	2.67	
3/3/2004	-	-	-	32	5	123	0	0	6	1.67	1.5	BM	2.83	1.5	3	1.83	BM	2.25	2.67	
3/2/2004	36	1	1.27	32	4.5	94.2	0	0	6	1.67	1.5	BM	2.83	1.5	3	1.83	BM	2.25	2.67	
3/1/2004	36	1	1.27	32	5	123	0.5	0.5	6	1.67	1.5	BM	2.83	1.5	3	1.83	BM	2.25	2.67	
2/25/2004	34	1	1.27	30	4.5	94.2	0	0	6	1.5	1.5	3	2.83	1.5	3	1.83	BM	2.5	2.67	
2/24/2004	34	0	0	32	4.5	94.2	0.3	0.3	6	1.5	1.5	3	2.83	1.5	3	1.83	BM	2.5	2.67	
2/19/2004	36	1	1.27	32	5	123	0	0	6	1	1.5	3	2.67	2	3	2	BM	2.83	2.5	
2/18/2004	34	2	7.16	32	4.5	94.2	0	0	6	1	1.5	3	2.67	2	3	2	BM	2.83	2.5	
2/17/2004	34	1	1.27	32	4.5	94.2	0	0	6	1	1.5	3	2.67	2	3	2	BM	2.83	2.5	
2/12/2004	32	0	0	30	4.5	94.2	0	0	6	1	1.5	3	2.67	2	3	2	BM	2.83	2.5	
2/11/2004	32	0	0	30	4.5	94.2	0	0	6	1	1.5	3	2.67	2	3	2	BM	2.83	2.5	
2/10/2004	30	1	1.27	30	4.5	94.2	0	0	6	1	1.5	3	2.67	2	3	2	BM	2.83	2.5	
2/9/2004	30	2	7.16	30	4.5	94.2	0	0	6	1	1.5	3	2.67	2	3	2	BM	2.83	2.5	
2/3/2004	34	2	7.16	30	4.5	94.2	0	0	6	0.75	1.5	3	2.67	2	3	2	BM	2.83	3	
2/2/2004	32	2	7.16	30	4.5	94.2	0.1	0.1	6	1	1.5	3	2.67	2	3	2	BM	2.83	3	
1/29/2004	32	1	1.27	30	4.5	94.2	0	0	6	1	1.5	3	2.67	2	3	2	BM	2.83	3	
1/28/2004	32	2	7.16	30	5	123	0	0	6	1	1.5	3	2.67	2	3	2	BM	2.67	3	
1/27/2004	32	2	7.16	30	5	123	0.4	0.4	6	1	1.5	3	2.67	2	3	2	BM	2.67	3	
1/26/2004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1/22/2004	34	0	0	32	4.5	94.2	0	0	4	1	1.5	3	2.67	1.67	3	1.83	BM	2.67	3	
1/21/2004	32	1	1.27	30	4.5	94.2	0	0	4	1	1.5	3	2.67	1.67	3	1.83	BM	2.67	3	

NO HEADINGS SHOWN WORK

2004 WASTE WATER SUMMARY

		TRAVEL CENTER TO PONDS				TOTAL FLOW TO PONDS				RAIN GAUGE INCHES		FREEBOARD AT PONDS											
												6	12B	2	9	12A	3	7	4	8	5	11	
DATE	TEMP	60 DEGREE V NOTCH "INCHES"	FLOW GPM	TEMP	90 DEGREE V NOTCH "INCHES"	FLOW GPM			in.	feet	feet	feet	feet	feet	feet	feet	feet	feet	feet	feet	feet	feet	Comments
1/20/2004	32	2	7.16	30	4.5	94.2	0.3		4	1	1.5	3	2.67	1.67	3	1.83	BM	2.67	3				
1/19/2004	32	2	7.16	30	4	70.2	0		4	1	1.5	3	2.67	1.67	3	1.83	BM	2.67	3				
1/15/2004	32	2	7.16	30	4.5	94.2	0		4	1	1.5	3	2.67	1.67	3	1.83	BM	2.5	3				
1/14/2004	32	1	1.27	30	4.5	94.2	0		4	1	1.5	3	2.67	1.67	3	1.83	BM	2.5	3				
1/13/2004	34	2	7.16	32	4.5	94.2	0		4	1	1.5	3	2.67	1.67	3	1.83	BM	2.5	3				
1/12/2004	34	1	1.27	32	4.5	94.2	0		4	1	1.5	3	2.67	1.67	3	1.67	BM	2.5	3				
1/8/2004	36	3	0	34	4.5	94.2	0		4	1	1.5	3	2.67	1.67	3	1.67	BM	2.5	3				
1/7/2004	-	-	-	-	-	-	0		4	1	1.5	3	2.67	1.67	3	1.67	BM	2.5	3				
1/6/2004	34	1	1.27	32	4.5	94.2	0		4	1	1.5	3	2.67	1.67	3	1.67	BM	2.5	3			-	
1/5/2004	34	2	7.16	32	4.5	94.2	trace		4	1.16	1.5	3	2.67	1.67	3	1.83	BM	2.5	3				

* BM denotes Below Marker (Marker ~ 3 Feet)

AVG	AVG	AVG	AVG	AVG	AVG	TOTAL	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	AVG	
43.04	1.57	4.98	40.89	4.73	107.51	11.09	12.80	1.23	1.39	3.00	2.59	1.88	3.00	2.01	BM	2.56	2.84			

PERMIT CONDITION 21/ ANNUAL REPORT

**D. UNDERGROUND PROCESS AND WASTE
WATER LINES**

UNDERGROUND PROCESS AND WASTEWATER LINES

Alkylation Unit

The Alky sewer tests were performed on all accessible lines inside battery limits. The lateral lines were either tested individually or with the main line between consecutive boxes. Each sewer test was performed by plugging each end of the line with an inflatable stopple. An inflatable bypass stopple or plug was installed on one end of the line and connected to a 1" pipe. The pipe was filled with water to a minimum of seven feet above grade. If the water maintained a constant "full" level for a period of one hour, then the line passed.

ID Number	Lateral Drains	Date Installed	Drawing Reference	Test Date	Pass/Fail/Repair Information	Signature	Investigation Results
A1	A-V23 & A-V24	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
	A-V25	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock	
	A-P8A & A-P8B	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock	
	A-E10	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
	A-V10	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
	A-V10 & A-V22	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock	
	A-E-15	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock	
	A-P1A	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
Main line from Box A1 & A2		1957	EA-09-102	8/30/2004	Did not hold water & water seals are severely corroded.	Robert Stock	
A2	A-P1A, A-P11, A-P9A & A-P9B	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
	A-P7	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock	
	A-P6A	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
	A-V14 & A-V16	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock	
	A-V8 & A-V9	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock	
	A-V8	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock	
Main line from Box A2 & A3		1957	EA-09-102	8/30/2004	Did not hold water & water seals are severely corroded.	Robert Stock	
A3	A-P6B	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
	A-V7	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock	
	A-V2	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
Main line from Box A3 & A4 does not hold water and the water seals are severely corroded.		1957	EA-09-102	8/30/2004	The 6" line is corroded into the concrete sump wall on both ends of the line. The concrete sump box bottom floor is severely corroded.	Robert Stock	
A4	A-P3	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
	A-V4 & A-V5	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
	A-E1	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
	A-P5A & A-P5B	1957	EA-09-102	8/30/2004	Did not hold water	Robert Stock	
Main line from Box A4 & A5 does not hold water and the water seals are severely corroded.		1957	EA-09-102	8/30/2004	The 6" line is corroded into the concrete sump wall on both ends of the line. The concrete sump box bottom floor is severely corroded.	Robert Stock	
A5	A-E4 & A-E5	1957	EA-09-102	8/30/2004	Did not hold water. The line is corroded into the concrete basin.	Robert Stock	
	A-P4 & A-P10	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock	
	A-V15	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock	
Main line from Box A5 & A6 does not hold water and the water seals are severely corroded.		1957	EA-09-102	8/30/2004	The 6" line is corroded into the concrete sump wall on both ends of the line. The concrete sump box bottom floor is severely corroded.	Robert Stock	

UNDERGROUND PROCESS AND WASTEWATER LINES

Alkylolation Unit

The Alky sewer tests were performed on all accessible lines inside battery limits. The lateral lines were either tested individually or with the main line between consecutive boxes. Each sewer test was performed by plugging each end of the line with an inflatable stopple. An inflatable bypass stopple or plug was installed on one end of the line and connected to a 1" pipe. the pipe was filled with water to a minimum of seven feet above grade. If the water maintained a constant "full" level for a period of one hour, then the line passed.						
ID Number	Lateral Drains	Date Installed	Drawing Reference	Test Date	Pass/Fail/Repair Information	Signature
A6	A-V5	1957	EA-09-102	8/30/2004	Taken out of Service & not tested	Robert Stock
Main line from Box A6 & ALSO Pit did not hold water.		1957	EA-09-102	8/30/2004	The 8" line is corroded into the concrete sump wall & the concrete sump box is severely corroded.	Robert Stock
Sewer Box A6 Flows N. then NW. then W. To Neutralizing Pit		1957	EA-09-102			
From Neutralizing Pit Drains Toward NW To Catch Basin CBZ-25 at Treating Unit		1957	EZ-80-09-510EP			
From Catch Basin CBZ-25 to Catch Basin CBZ-24		1960	EZ-80-09-510EP			End of Alky Unit
Also From Catch Basin C-11(Crude Unit) To Catch Basin CBZ-24		1957	EC-09-125 & EZ-80-510EP			Info Only, See Crude Unit

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	2005											
					JUN	JUN	JUL	AUG	SEP							
10	Move-in and relocate trailer	1	27JUN05*	27JUN05	6	13	20	27	4	11	18	25	1	8	15	22
20	Layout drain system and elevation	2	27JUN05	28JUN05												
40	Saw cut concrete from A-6 Sump	1	28JUN05	28JUN05												
90	Plug drain hdr at outlet of A-4	1	28JUN05	28JUN05												
30	Excavate drain line from ASO Pit	2	28JUN05	29JUN05												
100	Install blind at ASO Pit	1	28JUN05	28JUN05												
60	Saw cut conc from 8" drain hdr to	2	29JUN05	30JUN05												
50	Saw cut concrete from A-5 Sump	2	29JUN05	30JUN05												
70	Saw cut concrete from 8" hdr to	1	30JUN05	30JUN05												
120	Sandblast A-6 Sump & A-5	2	30JUN05	01JUL05												
80	Saw cut concrete from 8" hdr to	1	30JUN05	30JUN05												
110	Clean out A-6 Sump and A-5	1	01JUL05	01JUL05												
130	Excavate from A-6 Sump to A-5	2	01JUL05	06JUL05												
160	Cut holes in A-6 and A-5 Sumps	2	06JUL05	07JUL05												
170	Build forms for A-6 & A-5 Sumps	2	06JUL05	07JUL05												
140	Excavate from A-5 to A-4 Sumps	2	06JUL05	07JUL05												
150	Excavate from 8" drain hdr to	2	07JUL05	08JUL05												
180	Pour epoxy grout in btm of A-6	1	08JUL05	08JUL05												
190	Pour epoxy grout in btm of A-5	1	08JUL05	08JUL05												
200	Set form in A-6 Sump	2	09JUL05	11JUL05												
220	Install inlet & outlet from A-6 to	1	09JUL05	09JUL05												
210	Set form in A-5 Sump	2	09JUL05	11JUL05												
260	Excavate from 8" drain hdr to N	1	09JUL05	09JUL05												
240	Install 4" drain from A-P19 A&B to	2	11JUL05	12JUL05												
230	Install inlet & outlet to A-5 Sump	1	11JUL05	11JUL05												
880	Put 6" crusher fines in trenches	1	11JUL05	11JUL05												
280	Pour epoxy grout in A-6 & A-5	1	12JUL05	12JUL05												
250	Install 4" drain from A-E 4 to 8"	1	12JUL05	12JUL05												
290	Remove forms from A-6 & A-5	1	13JUL05	13JUL05												
270	Install 4" drain from 8" hdr to N	1	13JUL05	13JUL05												
300	Install plugs & test drains	1	14JUL05	14JUL05												
310	Remove plugs from testing inlet &	1	14JUL05	14JUL05												
360	Pull blind at ASO Pit	1	14JUL05	14JUL05												

Start Date	03JUN05	Sheet 1 of 4	Approved
Finish Date	22JUN05	Date	Checked
Data Date	13JUN05	Revision	Approved
Run Date	15JUN05 15:10		

G102

Giant Refining

Alky Drain System

Preliminary Schedule

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Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	2005																							
					JUN				JUL				AUG				SEP											
					6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26							
320	Install 90 ell on inlet & outlet A-6	1	14JUL05	14JUL05																								
330	Install 90 ell on inlet & outlet A-5	1	14JUL05	14JUL05																								
340	Put crusher fines around pipe -	2	14JUL05	15JUL05																								
370	Backfill & compact dirt in	2	15JUL05	18JUL05																								
380	Backfill & compact dirt -	2	15JUL05	18JUL05																								
420	Install blind flange on inlet to A-5	1	15JUL05	15JUL05																								
430	Remove plug from drain hdr at	1	15JUL05	15JUL05																								
440	Plug drain hdr at outlet of A-2	1	15JUL05	15JUL05																								
390	Install exp joint along trenches	1	18JUL05	18JUL05																								
350	Put crusher fines around 4" drain	1	18JUL05	18JUL05																								
400	Pour concrete pavement-	1	19JUL05	19JUL05																								
550	Cut concrete - A-4 to A-2 sumps	2	20JUL05	21JUL05																								
450	Clean out A-4 sump & A-3 sump	1	20JUL05	20JUL05																								
560	Cut concrete-6" drain to 4" drain	1	20JUL05	20JUL05																								
580	Cut concrete-6" hdr to A-V2	1	20JUL05	20JUL05																								
590	Cut concrete-6" drain hdr to A-P6	1	20JUL05	20JUL05																								
655	Cut concrete from 6" hdr to A-P14	1	20JUL05	20JUL05																								
460	Sandblast A-4 & A-3 sumps	1	21JUL05	21JUL05																								
570	Cut concrete-6" drain to oil	1	21JUL05	21JUL05																								
610	Excavate from 6" hdr to 4" drain	1	21JUL05	21JUL05																								
600	Excavate from A-4 to A-2 sump	2	22JUL05	25JUL05																								
490	Build forms for A-4 & A-3 sumps	2	22JUL05	25JUL05																								
470	Pour epoxy grout in btm of A-4 &	1	22JUL05	22JUL05																								
410	Put sealant on top of exp joint-A6	1	22JUL05	22JUL05																								
650	Excavate from 6" hdr to A-P14	1	22JUL05	22JUL05																								
620	Excavate from 6" drain to oil	1	25JUL05	25JUL05																								
640	Excavate from 6" drain hdr to	1	25JUL05	25JUL05																								
480	Cut holes in walls of A-4 & A-3	3	25JUL05	27JUL05																								
630	Excavate from 6" header to A-V2	1	25JUL05	25JUL05																								
700	Remove blind flange from inlet	1	26JUL05	26JUL05																								
500	Set forms in A-4 sump	2	26JUL05	27JUL05																								
1170	Put 6" crusher fines in trenches	1	26JUL05	26JUL05																								
710	Install 4" drain from hdr to A-P5	1	27JUL05	27JUL05																								

Start Date	03JUN05	Sheet 2 of 4	Giant Refining
Finish Date	22AUG05	Date	
Data Date	13JUN05	Revision	
Run Date	15JUN05 15:10	Checked	
		Approved	

Alky Drain System

Preliminary Schedule

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Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	2005											
					JUN	JUN	JUL	AUG	SEP							
510	Set forms in A-3 sump	2	27JUL05	28JUL05	6	13	20	27	4	11	18	25	1	8	15	22
520	Install inlet & outlet to A-4 sump	1	27JUL05	27JUL05												26
720	Plug outlet of A-4 sump	1	27JUL05	27JUL05												
660	Install 4" drain from hdr to A-V2	1	28JUL05	28JUL05												
530	Install inlet & outlet to A-3 sump	1	28JUL05	28JUL05												
680	Install 4" drain - hdr to sealant	1	28JUL05	28JUL05												
670	Install 4" drain from hdr to A-P6	1	29JUL05	29JUL05												
540	Pour epoxy grout in A-4 & A-3	1	29JUL05	29JUL05												
750	Test drains from sump A4 to	1	01AUG05	01AUG05												
730	Remove forms from sump A-4	1	01AUG05	01AUG05												
740	Remove forms from sump A-3	1	01AUG05	01AUG05												
760	Put crusher fines around 6"	1	02AUG05	02AUG05												
770	Put crusher fines around 4" drains	1	02AUG05	02AUG05												
780	Backfill & compact trenches - A-4	1	03AUG05	03AUG05												
800	Install exp joint along trenches	1	03AUG05	03AUG05												
810	Pour concrete pavement from A-4	1	04AUG05	04AUG05												
850	Cut concrete from A-2 & A-1	1	05AUG05	05AUG05												
860	Cut concrete from sump A-1 to	2	05AUG05	08AUG05												
790	Install 90 ell on inlet & outlet of	1	05AUG05	05AUG05												
830	Install blind flange on outlet of A-2	1	05AUG05	05AUG05												
840	Remove plug from A-2 sump	1	05AUG05	05AUG05												
890	Clean-out A-2 & A-1 sumps	1	08AUG05	08AUG05												
820	Put sealant on top of exp joints	1	08AUG05	08AUG05												
870	Cut concrete from 4" to A-E41	1	08AUG05	08AUG05												
900	Sandblast A-2 & A-1 sumps	1	09AUG05	09AUG05												
920	Build forms for A-2 & A-1 sumps	2	09AUG05	10AUG05												
910	Pour epoxy in btm of A-2 & A-1	1	09AUG05	09AUG05												
930	Cut holes in walls of A-2 & A-1	1	10AUG05	10AUG05												
940	Set forms in sump A-2	2	10AUG05	11AUG05												
960	Excavate from A-2 to A-1 sumps	1	11AUG05	11AUG05												
970	Excavate from A-1 sump to A-V	2	11AUG05	12AUG05												
950	Set forms in sump A-1	1	11AUG05	11AUG05												
980	Excavate from 4" drain to A-E41	1	12AUG05	12AUG05												

✓ Set forms in A-3 sump
 ✓ Install inlet & outlet to A-4 sump
 ✓ Plug outlet of A-4 sump
 ✓ Install 4" drain from hdr to A-V2
 ✓ Install inlet & outlet to A-3 sump
 ✓ Install 4" drain - hdr to sealant pump & AP14A&B
 ✓ Install 4" drain from hdr to A-P6 A&B
 ✓ Pour epoxy grout in A-4 & A-3 sumps
 ✓ Test drains from sump A4 to outlet of A-2
 ✓ Remove forms from sump A-4
 ✓ Remove forms from sump A-3
 ✓ Put crusher fines around 6" drain-A4 to A-2
 ✓ Put crusher fines around 4" drains
 ✓ Backfill & compact trenches - A-4 to A-2
 ✓ Install exp joint along trenches
 ✓ Pour concrete pavement from A-4 to A-2
 ✓ Cut concrete from A-2 & A-1 sump
 ✓ Cut concrete from sump A-1 to A-V23 & 24
 ✓ Install 90 ell on inlet & outlet of A-4 & A-3
 ✓ Install blind flange on outlet of A-2 sump
 ✓ Remove plug from A-2 sump
 ✓ Clean-out A-2 & A-1 sumps
 ✓ Put sealant on top of exp joints
 ✓ Cut concrete from 4" to A-E41 & 44
 ✓ Sandblast A-2 & A-1 sumps
 ✓ Build forms for A-2 & A-1 sumps
 ✓ Pour epoxy in btm of A-2 & A-1 sump
 ✓ Cut holes in walls of A-2 & A-1 sumps
 ✓ Set forms in sump A-2
 ✓ Excavate from A-2 to A-1 sumps
 ✓ Excavate from A-1 sump to A-V 23 & 24
 ✓ Set forms in sump A-1
 ✓ Excavate from 4" drain to A-E41 & E-44

Start Date

03JUN05

Finish Date

22AUG05

Data Date

13JUN05

Run Date

15JUN05 15:10

G002

Activity

Early Bar

Progress Bar

Critical Activity

Giant Refining

Alky Drain System

Preliminary schedule

Sheet 3 of 4

Date

Revision

Checked

Approved

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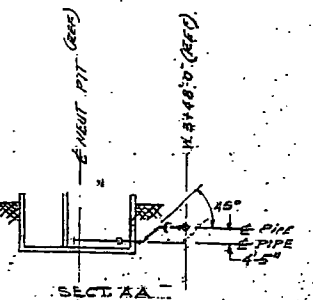
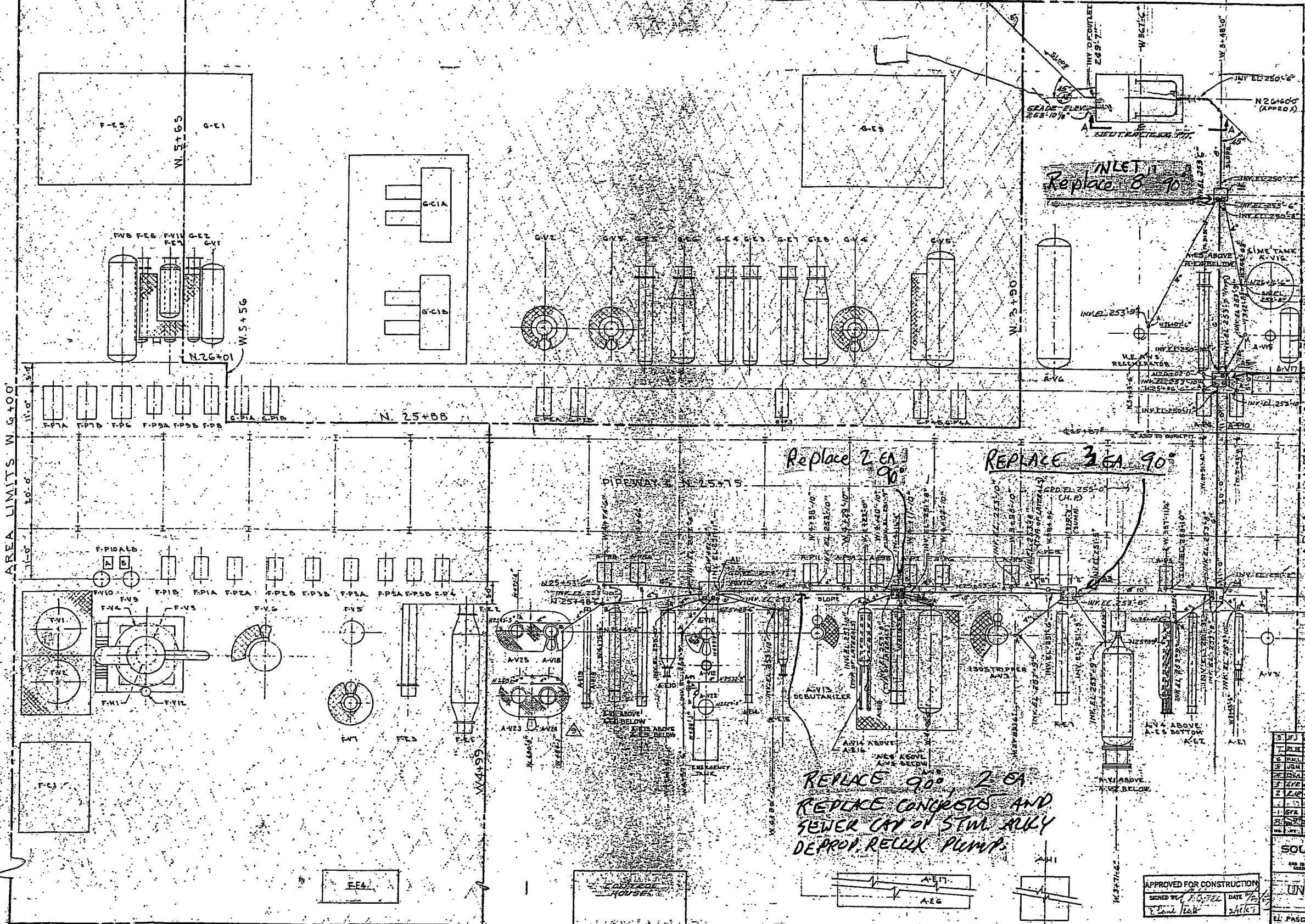
Activity ID	Activity Description	Orig Dur	Early Start	Early Finish	2005																
					JUN			JUL			AUG			SEP							
					6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26
1180	Put 6" crusher fines in trenches	1	12AUG05	12AUG05											☒ Put 6" crusher fines in trenches						
1000	Install inlet & outlet to A-2 & A-1	1	15AUG05	15AUG05											☒ Install inlet & outlet to A-2 & A-1 sumps						
1010	Install 4" drain from A-V23 & 24 to	1	15AUG05	15AUG05											☒ Install 4" drain from A-V23 & 24 to sump A-1						
1020	Install 4" drain from A-E41-E44 to	1	15AUG05	15AUG05											☒ Install 4" drain from A-E41-E44 to 6" drain						
1030	Install 4" drain form A-P9 A&B	1	15AUG05	15AUG05											☒ Install 4" drain form A-P9 A&B AG-P11 to hdr						
1080	Put crusher fines around 4"-6"														☒ Put crusher fines around 4"-6" drain A-V23&24-A2						
1040	Pour epoxy grout in sumps A-2 &	1	16AUG05	16AUG05											☒ Pour epoxy grout in sumps A-2 & A-1						
1050	Remove forms from sump A-2	1	17AUG05	17AUG05											☒ Remove forms from sump A-2						
1060	Remove forms from sump A-1	1	17AUG05	17AUG05											☒ Remove forms from sump A-1						
1070	Test drains from A-V23-V24 to	1	17AUG05	17AUG05											☒ Test drains from A-V23-V24 to A-2 sump						
1090	Backfill & compact trenches from														Backfill & compact trenches from A-V23&24 to A-2 sump						
1100	Install exp joint along trenches														☒ Install exp joint along trenches						
1110	Pour concrete pavement from														Pour concrete pavement from A-V23&24 to A-2 sump						
1130	Install 90 ell on inlet & outlet-A-1														☒ Install 90 ell on inlet & outlet-A-1 & A-2 sumps						
1140	Remove plug from A-2 sump														☒ Remove plug from A-2 sump						
1150	Install cover over sumps														☒ Install cover over sumps						
1120	Put sealant on on top of exp joint														☒ Put sealant on on top of exp joint						
1160	Clean up area														☒ Clean up area						

Install Inlet & outlet to A-2 & A-1 sumps
 Install 4" drain from A-V23 & 24 to sump A-1
 Install 4" drain from A-E41-E44 to 6" drain
 Install 4" drain form A-P9 A&B AG-P11 to hdr
 Put crusher fines around 4"-6" drain A-V23&24-A-2
 Pour epoxy grout in sumps A-2 & A-1
 Remove forms from sump A-2
 Remove forms from sump A-1
 Test drains from A-V23-V24 to A-2 sump
 Backfill & compact trenches from A-V23&24 to A-2
 Install exp joint along trenches
 Pour concrete pavement from A-V23&24 to A-2 sump
 Install 90 ell on inlet & outlet-A-1 & A-2 sumps
 Remove plug from A-2 sump
 Install cover over sumps
 Put sealant on on top of exp joint
 Clean up area

Start Date 03JUN05	Finish Date 22AUG05	Run Date 15JUN05 15:10	0302 Giant Refining Alky Drain System Preliminary Schedule	Sheet 4 of 4 Date Revision Checked Approved
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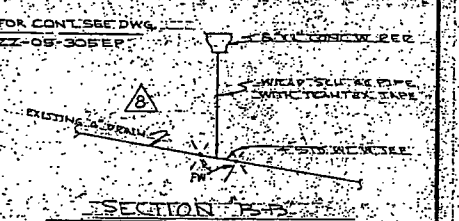


AREA LIMITS N 26+80



REFERENCE DWGS.
TYP. PILING AT SUMPS & DE. TUNNELS
AZ-08-103
UNDERGROUND PIPING PLAN-EG-09-102
UNDERGROUND PIPING PLAN-EG-09-102
PLOT PLAN-EG-09-101
AREA LOCATION-EG-09-101
FOUNDATION: NEUTRALIZING PIT-EG-09-101
BILL OF MATERIAL LIST (UNDERGROUND PIPING)
AX-09-102
SUMP STRUCTURAL DETAILS-EG-09-106
USE BW OR LW PIPE PER CLASS 2 OF SWECO SPECS.
N-26-80
W-35-102

REPLACE WHOLE SEWER
Box & Piping



SECTION BB

PRINT RECORD			
NO.	DATE	BY	TO
1	10-10-50	W. J. B.	W. J. B.
2	10-10-50	W. J. B.	W. J. B.
3	10-10-50	W. J. B.	W. J. B.
4	10-10-50	W. J. B.	W. J. B.
5	10-10-50	W. J. B.	W. J. B.
6	10-10-50	W. J. B.	W. J. B.
7	10-10-50	W. J. B.	W. J. B.
8	10-10-50	W. J. B.	W. J. B.
9	10-10-50	W. J. B.	W. J. B.
10	10-10-50	W. J. B.	W. J. B.

REVISIONS

1	ADD	AV-25+45	AV-25+45	AV-25+45
2	ADD	AV-25+45	AV-25+45	AV-25+45
3	ADD	AV-25+45	AV-25+45	AV-25+45
4	ADD	AV-25+45	AV-25+45	AV-25+45
5	ADD	AV-25+45	AV-25+45	AV-25+45
6	ADD	AV-25+45	AV-25+45	AV-25+45
7	ADD	AV-25+45	AV-25+45	AV-25+45
8	ADD	AV-25+45	AV-25+45	AV-25+45
9	ADD	AV-25+45	AV-25+45	AV-25+45
10	ADD	AV-25+45	AV-25+45	AV-25+45

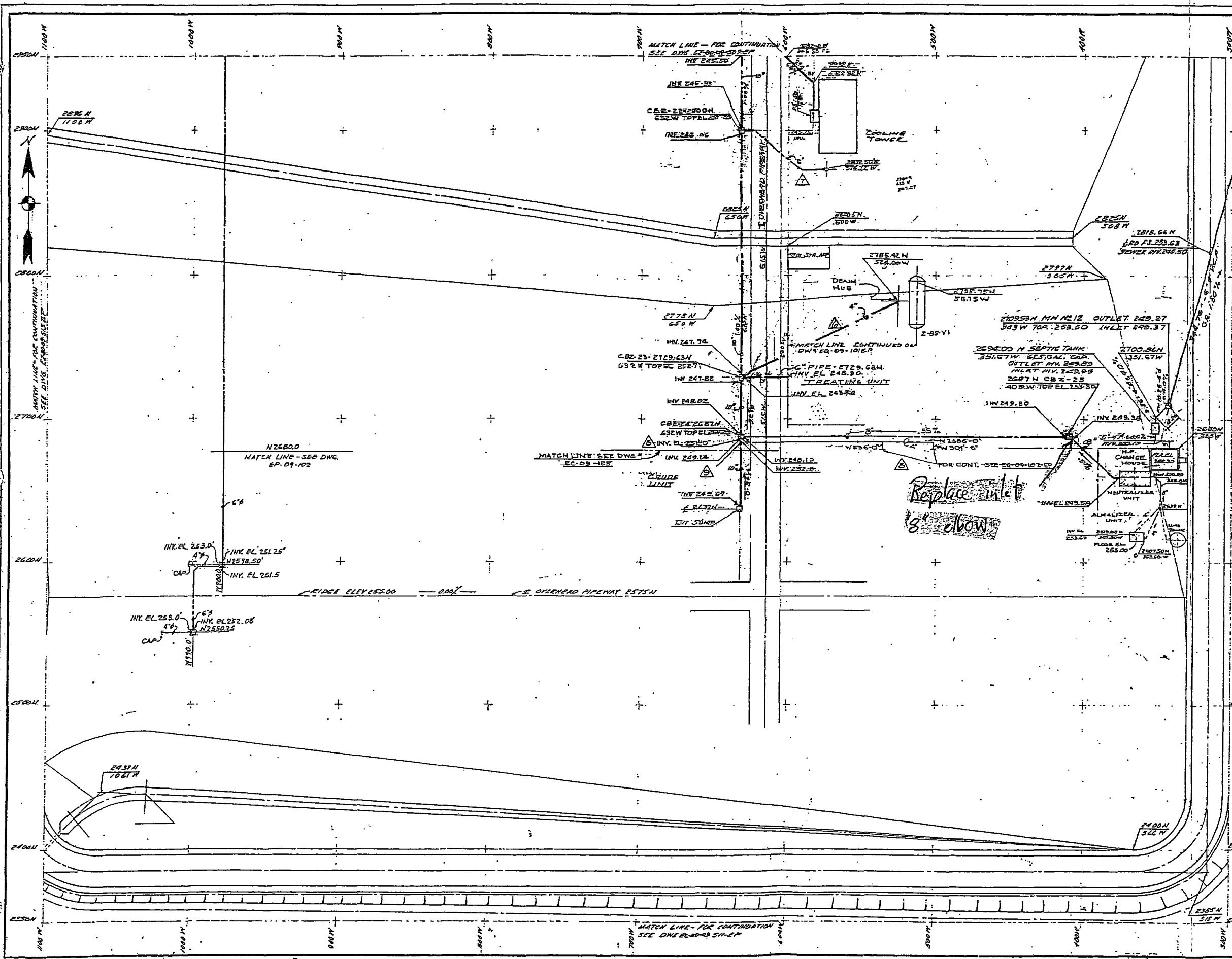
SOUTHWESTERN ENGINEERING COMPANY
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APPROVED FOR CONSTRUCTION
SIGNED BY: [Signature] DATE: 10/10/50
[Signature] 10/10/50

UNDERGROUND PIPING
PLAN
SCALE: 1"=10'-0"
DATE: 10/10/50
DRAWN BY: [Signature]
CHECKED BY: [Signature]
APPROVED BY: [Signature]

PAID: NATURAL GAS PRODUCTS COMPANY
CONTRACT: [Number]
GALLUP, NEW MEXICO
EG-09-102

AREA LIMITS N 24+63



NOTE: -
H.F. CHANGE HOUSE SHOWER
DRAINS TO ENTER NEUTRALIZER UNIT
FROM S.W. CORNER OF CHANGE HOUSE
SEPTIC TANKS 3' WIDE & 10' LONG X 5' DEEP
FIELD POSITION LEVEL BOTTOM 4.1' BELOW
INVERT OF PIPE

APPROVED FOR CONSTRUCTION
SIGNED BY: [Signature] DATE: 3-7-57
[Signature] 3-7-57

EG-09-102-EP	GAS COIL, UNDERGROUND PIPING PLAN
AC-5K-80	ENTRANCE TO CH-2 FROM TANK 285V2
AZ-05-03-104-EP	DRAIN & OVERFLOW PIPE DETAILS
EP-03-104-EP	PUMP DETAILS
EE-0007-84P	KEY PLAN
EE-02-110-EP	SITE GRADING PLAN
DWG NO.	REFERENCE DRAWING

1	INVERT 285V2 CHANGED DRAIN FROM TANK 285V2 TO 285V1
2	INVERT 285V1 CHANGED DRAIN FROM TANK 285V1 TO 285V2
3	INVERT 285V2 CHANGED DRAIN FROM TANK 285V2 TO 285V1
4	INVERT 285V1 CHANGED DRAIN FROM TANK 285V1 TO 285V2
5	INVERT 285V2 CHANGED DRAIN FROM TANK 285V2 TO 285V1
6	INVERT 285V1 CHANGED DRAIN FROM TANK 285V1 TO 285V2
7	INVERT 285V2 CHANGED DRAIN FROM TANK 285V2 TO 285V1
8	INVERT 285V1 CHANGED DRAIN FROM TANK 285V1 TO 285V2
9	INVERT 285V2 CHANGED DRAIN FROM TANK 285V2 TO 285V1
10	INVERT 285V1 CHANGED DRAIN FROM TANK 285V1 TO 285V2
11	INVERT 285V2 CHANGED DRAIN FROM TANK 285V2 TO 285V1
12	INVERT 285V1 CHANGED DRAIN FROM TANK 285V1 TO 285V2
13	INVERT 285V2 CHANGED DRAIN FROM TANK 285V2 TO 285V1
14	INVERT 285V1 CHANGED DRAIN FROM TANK 285V1 TO 285V2
15	INVERT 285V2 CHANGED DRAIN FROM TANK 285V2 TO 285V1
16	INVERT 285V1 CHANGED DRAIN FROM TANK 285V1 TO 285V2
17	INVERT 285V2 CHANGED DRAIN FROM TANK 285V2 TO 285V1
18	INVERT 285V1 CHANGED DRAIN FROM TANK 285V1 TO 285V2
19	INVERT 285V2 CHANGED DRAIN FROM TANK 285V2 TO 285V1
20	INVERT 285V1 CHANGED DRAIN FROM TANK 285V1 TO 285V2

THIS PROJECT IS THE PROPERTY OF	
SOUTHWESTERN ENGINEERING COMPANY	
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AND IS SUBJECT TO REVISIONS AS REQUIRED BY THE CLIENT OR THE COMPANY.	
USED DIRECTLY OR INDIRECTLY IN ANY WAY IN CONNECTION WITH THE PROJECT OF THIS COMPANY.	
DRAWING NO. 2350 N TO 2850 N	
300 W TO 1100 W	
E. PASO NATURAL GAS PRODUCTS COMPANY	
CALIF. REFINERY NEW MEXICO	
DRAWING SIZE A-7050	



N 26+80 CRUDE PROCESS AREA LIMITS

DETAIL C-V13 DRAIN

REFERENCE DWG'S

TYP PIPING AT SUMPS & DRAIN FUNNELS...
PLOT PLAN...
CRUDE & VACUUM UNIT FND & LOC. PLAN...
SUMP FOUNDATIONS...
BILL OF MATERIAL...

NOTES:
1. ALL PIPING AT ALL DRAIN FUNNELS...
2. USE BUTT WELD OR LAMP WELD PIPE PER CLASS "2" OF SWISCO SPEC'S...
3. FOR INDICATED FUTURE DRAINS - INSTALL STUB THROUGH SUMP ONLY & BLANK.

REVISIONS

NO.	DATE	DESCRIPTION
1	10-1-57	ISSUED FOR CONSTRUCTION
2	10-1-57	REVISION
3	10-1-57	REVISION
4	10-1-57	REVISION
5	10-1-57	REVISION
6	10-1-57	REVISION
7	10-1-57	REVISION
8	10-1-57	REVISION
9	10-1-57	REVISION
10	10-1-57	REVISION
11	10-1-57	REVISION
12	10-1-57	REVISION
13	10-1-57	REVISION
14	10-1-57	REVISION
15	10-1-57	REVISION
16	10-1-57	REVISION
17	10-1-57	REVISION
18	10-1-57	REVISION
19	10-1-57	REVISION
20	10-1-57	REVISION

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AND IS SUBJECT TO REVISIONS ON DEMAND. IT IS ISSUED ON EXPRESS CONDITION THAT IT IS NOT TO BE
USED DIRECTLY OR INDIRECTLY IN ANY WAY WITHOUT THE INTEREST OF THIS COMPANY.

CRUDE & VACUUM UNIT
UNDERGROUND PIPING PLAN

APPROVED FOR CONSTRUCTION
SIGNED BY: [Signature] DATE: 2-2-57

ELASO NATURAL GAS PRODUCTS CO.
CHULA REFINERY
GALLUP, NEW MEXICO

EGD9-125

PERMIT CONDITION 21 ANNUAL REPORT

E. SUMMARY OF ALL LEAKS

Permit Condition 21. Annual Report

E. Summary of all leaks, spills and releases and corrective actions taken.

2/3/04 – The charge pump on Tank 581 (light cycle oil) leaked and sprayed 11 gallons into the earthen spill containment. The spill containment was cleaned up and the seal was replaced.

2/11/04 – The sewer drain line at tank 567 leaked 20 gallons of gasoline into the earthen spill containment surrounding this tank. The spill was cleaned up and repairs were made.

4/8/04 – An explosion in alkylolation unit resulted in a fire that consumed 100,000 pounds of alkylate and LPGs that had been released. No contaminants left the site.

9/28/04 – The acid soluble oil basin which contains light cycle oil overflowed onto the ground surface. The oil was washed down into the pit which then reports to the oil water separator and the remaining soil was cleaned up.

11/6/04 – Tank 105 containing slop oil and water overflowed onto the earthen spill containment. The spill containment was cleaned up. Giant is investigating the installation of a level controller for this tank.

PERMIT CONDITION 21 ANNUAL REPORT

**F. SUMMARY OF DISCOVERY OF NEW
GROUNDWATER CONTAMINATION**

Permit Condition 21. Annual Report

F. Summary of discovery of new groundwater contamination.

Giant does not believe there were any new discoveries of groundwater contamination. Newly installed monitor well BW-3C was sampled for the first time in August 2004. Analyses indicated benzene at .0052 ppm, toluene at .001 ppm, and xylene at .0015. Resampling in October indicated non-detect at <.001 ppm for BTX. Newly installed BW-2C indicated a 1.5 ppm for acetone in the August sampling, but upon resampling a nondetect <.01 ppm was found. Giant believes these contaminants were probably due to drilling, sampling or lab contamination.

PERMIT CONDITION 21 ANNUAL REPORT

G. SUMMARY AND COPIES OF EPA/NMED/RCRA

Permit Condition 21. Annual Report

G. Summary and copies of all EPA/NMED RCRA activity:

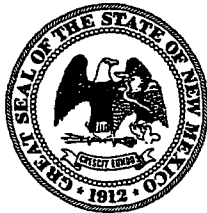
February- On February 11, the NMED conducted a hazardous waste Compliance Evaluation Inspection. Two violations were noted:

1. Failure to close 2 fiber drums of universal waste lamps.
2. Failure to maintain a satellite drum of paint waste under control of operator.

NMED determined that these violations have been adequately addressed and no further action is required .

The following items are attached:

- ✓ Copy of inspection report and correspondence regarding the above inspection.
- ✓ 2004 Land Treatment Unit Inspection Summary
- ✓ 2004 Annual Hazardous Waste Fee Report
- ✓ Hazardous Waste Bureau GPS/GIS Survey
- ✓ 2004 Annual Unit Audit



BILL RICHARDSON
GOVERNOR

State of New Mexico ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us



RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

Inspection Report

Facility: Giant Refining Co. (Piriza) Location: 12 miles East of Gallup
New Mexico
EPA ID #: NMID 000333 211 Mailing Address: Route 3, Box 7
Ownership: Giant Industries, Arizona Inc. Gallup, New Mexico
Authorized Agent: OPA Giant Refining Co. Facility Contact: Dorinda Mancini

Time of Entry 10:20 am Date 2/11/04 Access: Granted / Denied
Facility Representative _____ Title _____
Reason(s) for Denial of Access (if applicable) _____

Facility Representative Signature

Inspector Signature

Entry Conference:

Present Credentials to Facility Representative
Cite Statutory Authority to Enter Site (NMSA § 74-4-4.3)
Cite Statutory Authority to Conduct Inspection, Obtain Samples and Take
Photographs (NMSA § 74-4-4.3)
Specify Reasons for, and Nature of the Inspection
Specify Objectives and Procedures for Inspection
Schedule Exit Conference

✓
✓
✓
✓
✓
✓

Participants:

Name	Signature	Title	Phone #
Robert Atencio	[Signature]	Senior Inspector	(505) 428-2523
Annal W. Hester	[Signature]	Senior Inv.	428-2507
Bob Vollmer	[Signature]	RCPA Inspector	428-2506
Ed Riege	[Signature]	ENV Specialist	505 722 0217
MATT DAVIS	[Signature]	GM	722-0212
Dorinda Mancini	[Signature]	Env. Manager	722-0227
Stephen Morris	[Signature]	Env. Coordinator	722-0258
Mike V. Coffman	[Signature]	Env. Manager	428-2522

This Compliance Evaluation Inspection (CEI)
was conducted based on:

EPA ID ICMP 000553211F
Facility Name Find Delivery Co.
Date 2/11/04

FY: 04 Grant Requirements ✓

Follow up to Previous CEI

Citizen Complaint

Facility was Last Inspected on:

Observation by Inspector

Checklists Completed: CESQG, SQG, <90 Day, Transporter, LDR, Tanks, and Containers.

History, Size, and Nature of Business: The facility was built in 1957 and
originally owned by #1 Diesel Engine Parts Company. It was then
acquired by Shell Oil Company in 1961. Find Delivery Co.
acquired it in 1982.

Find Delivery produces, unloads, and ships diesel fuel
engine fuel, and kerosene. Find carries all its crude oil
which is shipped via pipe line. The facility is located in
McKinstry County approximately 17 miles East of Colfax
just North of Interstate 40 exit 99 Townsboro.

Waste Streams Generated:

Waste Code	Description of Process	Location
RCRA 6006, 2006 2006 2006 N/A	Welding machine used welding metal to clean pumps and maintenance parts	Welding shop
N/A	Pneumatic warehouse utilized to maintain and store oil & hydraulic oils (product storage).	Pneumatic warehouse
N/A	The pipe fitters shop is used for welding, pipe fitting & fabrication.	Pipe Fitters sh.
2008 & 2009	Warehouse used to store tools, equipment, and product & spill equipment. The Universal waste storage also contains used batteries & fluorescent bulbs.	Back warehouse
K171	Spent hydro-treating catalyst is trans transported for disposal by Richman Co.	Spent hydro- treating is the Neptitha

EPA ID AKW00000333211Facility Name Gold RefiningDate 2/11/04

Waste Streams Generated:

Waste Code	Description of Process	Location
F037	Sludge / solids removal from process sewer and sumps which is transported for disposal by Rinchem Company.	Process sewer & sumps
D002	Acidic Residue from Process Equipment cleaning & sludge which is transported for disposal by Rinchem Co.	Sulfuric Acid Tank
D002	Caustic Residue from sludge equipment cleaning & sludge removal is transported for disposal by Rinchem Company.	KOH Treatment
K051	Residue from API separator cleanout which is disposed transported for disposal by Rinchem Company.	API Separator
D001 non D018	Sludge / Cleanout of sludge / liquids from tank 570	1 Gasoline Tank 570
D001 non D002	Spent Activated Carbon from ASO Pit Vent utilized for odor control which is transported for disposal by Rinchem Co.	Acid Soluble Oils Pit
D001 F003	Waste paint related material is transported for disposal by Rinchem Company.	through-out facility

EPA ID UMD000533211Facility Name Purina RefineryDate 2/11/04

Waste Streams Generated:

Waste Code	Description of Process	Location
	Claration Basin is designated as a SUMU#1 and the unit is in use. the A.B. also treats waste water at the Refinery	located @ the west end of the facility
	The Evaporation Pond is identified as SUMU#2 which is in use. The Ponds evaporate waste-water @ the Refinery	located at the west end of the facility
	Rail Road Rock Lagoon is identified as SUMU#8 which is ongoing remediation. TCE & organic compounds are being detected	located @ the north end of the facility
	Collect Waste-water Collection System is identified as SUMU#12. the stormwater collection system is in use throughout the facility	throughout the facility
	The Drainage Ditch between SPI Evaporator Ponds & Neutralization Tank Evaporation Ponds is in use. the Drainage Ditch is identified as SUMU#13	Near Neutralization Ponds

EPA ID NW0000333211
 Facility Name CINIZA
 Date 2/11/04

Waste Streams Generated:

Waste Code	Description of Process	Location
	Land treatment unit is undergoing post closure care which identified as SWMC #9.	W/4/epd/0010 5th level 200 ft west of CINIZA tank Tanner
	PPT separator receives waste-water from the colony drainage system consisting of a network of tank farm sumps and sewer lines within the process areas. Oil is separated and recovered for processing	throughout the refinery & drainage system West end of the CINIZA tank Tanner

Compliance Evaluation Inspection, Better Business Practices

Facility Giant - Ciniza EPA # NMD000333211 DATE 2-11-04

Pollution Prevention & Waste Minimization Suggestions

Questions, Concerns, Comments

- 1) Extremely well organized waste determination records, manifests, inspection records, training plan & records, & other misc. hazardous waste management records.
- 2) Staff very helpful & informative.
- 3) Main warehouse universal waste area well organized.
- 4) Excellent aerosol cans management program.

EPA ID DM000333211
Facility Name Quinn White
Date 1/6

Results of Inspection:

Subscribed followed by inspection
contaminated. 4/19/00, with. 5/20/01 & other
related. areas. and 6. Record necessary and
and bill.

The Following Potential Violations Were Noted:

Potential Violation	Specifics: (location, quantities, documents, photos, etc.)	Regulatory Citation
1) Failure to close 2 containers of spent fluorescent bulbs. located at the main back warehouse		243.13 (d)(1)
2) Failure to maintain SAP under the control of the operator generating aerosol paint cans located at the environmental storage area		262.34 (c)(1)

Exit Conference:

EPA ID NM0000333-211
Facility Name Giant-Cinica
Date 2-11-94

Time of Exit: 6:30 am

Discussion/Explanation of Potential Violations

✓ Explain Review Process by NMED/HWB Management

✓ NMED Anticipated Timetable for Notice of Violation Letter

✓ Explain Enforcement Policy and Procedures (incl. pos. penalties)

Explain Availability of On Site Technical Assistance

Participants:

Name	Signature	Title	Phone #
<u>Art Valles</u>	<u>[Signature]</u>	<u>RORA Inspector</u>	<u>428-3506</u>
<u>Anna Winters</u>	<u>[Signature]</u>	<u>2nd Shift</u>	<u>428-3509</u>
<u>Mark J. Collins</u>	<u>[Signature]</u>	<u>Env. Insp.</u>	<u>428-3502</u>
<u>Robert Titus</u>	<u>[Signature]</u>	<u>District Manager</u>	<u>722-2527</u>
<u>So Rios</u>	<u>[Signature]</u>	<u>Env. Sub</u>	<u>722-4027</u>
<u>Doreen S. [unclear]</u>	<u>[Signature]</u>	<u>Env. Insp.</u>	<u>722-0202</u>
<u>MICHAEL DAVIS</u>	<u>[Signature]</u>	<u>Env. Insp.</u>	<u>722-2222</u>

I have been advised that at the time of inspection, no potential violations of 20 NMAC 4.1 were identified. I also understand that I remain obligated to comply with all applicable laws and regulations.

✓ I have been advised of the potential violations identified during the inspection. I understand that in accordance with §74-4-10 NMSA 1978 (Repl. Pamp. 2000), NMED may: (1) issue a notice of violation requesting voluntary compliance within a specified time period; (2) issue a compliance order requiring compliance immediately or within a specified time period or assessing a civil penalty for any past or current violations of up to \$10,000 per day of noncompliance with each violation or both; or (3) commence a civil action in district court for appropriate relief, including a temporary or permanent injunction. Any such order issued may include a suspension or revocation of any permit issued by NMED.

[Signature]
Facility Representative



BILL RICHARDSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us



RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

**CERTIFIED MAIL
RETURN RECEIPT REQUIRED**

April 5, 2004

Matt Davis
General Manager
Giant Refining Co., Ciniza Refining
Route 3, Box 7
Gallup, NM 87301

**SUBJECT: NOTICE OF VIOLATION AND RESOLUTION
GIANT REFINING CO., CINIZA REFINING, EPA ID# NMD000333211**

Dear Mr. Davis:

On February 11, 2004, the New Mexico Environment Department (NMED) conducted a hazardous waste Compliance Evaluation Inspection at Giant Refining Co., Ciniza Refining (Ciniza Refinery), located 17 miles east of Gallup at I-40 Exit 39, Jamestown. Based on that inspection and review of the information obtained, NMED has determined that your facility is a Large Quantity Generator and has violated the New Mexico Hazardous Waste Management Regulations (20.4.1 NMAC) as specified below.

The following violations were noted:

1. Ciniza Refinery failed to close 2 fiber drums of universal waste lamps. Two fiber drums of spent fluorescent bulbs located at the universal waste accumulation area of the main warehouse were not closed. This is a violation of 20.4.1.1000 NMAC, incorporating 40 CFR § 273.13(d)(1).
2. Ciniza Refinery failed to maintain a satellite accumulation area under the control of the operator. One 55-gallon black metal drum of spent paint related waste from spent aerosol cans located at the southeast corner of the facility was not under the control of the operator. This is a violation of 20.4.1.300 NMAC, incorporating 40 CFR § 262.34(c)(1).

Matt Davis
April 5, 2004
Page 2

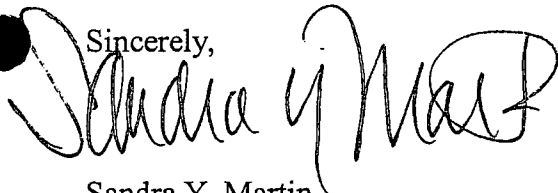
In accordance with 74-4-10 NMSA 1978, NMED may: (1) issue a Compliance Order requiring compliance immediately or within a specified time period, or assess a civil penalty for any past or current violations of up to \$10,000 per day of non-compliance with each violation, or both; or (2) commence a civil action in District Court for appropriate relief, including a temporary or permanent injunction. Any such order may include a suspension or revocation of any permit issued by NMED.

The NMED has reviewed your response to the Inspection Report dated February 17, 2004. Based on a review of that response, NMED has determined that the violations cited in this Notice of Violation have already been adequately addressed and no further action is required.

This letter does not relieve Ciniza Refinery of its obligation to comply with any other applicable laws and regulations.

If you have any questions regarding this letter, please contact Robert Atencio of my staff at (505) 428-2523. Please address your written response to the attention of Robert Atencio at the address in the letterhead.

Sincerely,



Sandra Y. Martin
Acting Chief
Hazardous Waste Bureau

SYM:ra

cc: Barry S. Birch, Acting Manager, Compliance & Technical Assistance Program
Anna Maestas, Environmental Supervisor
Robert Atencio, Environmental Specialist
Tom Skibitski, General Manager, District I
Hope Monzeglio, HWB

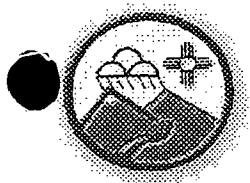
file: Library #2401
hwbsoc05/enforcement/Atencio

2004 Land Treatment Unit Inspection

Date of Inspection	Inspector's Name	Findings
01/08/04	Kurt Kirlin	OK
01/15/04	Kurt Kirlin	OK
01/22/04	Lynn Miles	OK
01/29/04	Lynn Miles	OK
02/04/04	Lynn Miles	OK
02/11/04	Lynn Miles	OK
02/18/04	Lynn Miles	OK
02/25/04	Lynn Miles	OK
03/03/04	Lynn Miles	OK
03/04/04	Kent McKinney	OK
03/10/04	Lynn Miles	OK
03/11/04	Kent McKinney	OK
03/17/04	Lynn Miles	OK
03/18/05	Kent McKinney	OK
03/24/05	Lynn Miles	OK
03/25/05	Kent McKinney	OK
03/31/05	Lynn Miles	OK
04/01/04	Kent McKinney	OK
04/07/04	Lynn Miles	OK
04/08/04	Kent McKinney	OK
04/14/04	Lynn Miles	OK
04/15/04	Kent McKinney	OK
04/21/05	Lynn Miles	OK
04/28/04	Lynn Miles	OK
04/29/04	Kent McKinney	OK
05/05/04	Lynn Miles	OK
05/06/04	Kent McKinney	OK
05/12/04	Lynn Miles	OK
05/19/05	Dorinda Mancini	OK
05/20/04	Kent McKinney	OK
05/26/05	Lynn Miles	OK
05/27/04	Kent McKinney	OK
06/02/04	Dorinda Mancini	OK
06/03/04	Kent McKinney	OK
06/09/04	Dorinda Mancini	OK
06/10/04	Kent McKinney	OK
06/16/04	Dorinda Mancini	OK
06/17/04	Kent McKinney	OK
06/23/04	Dorinda Mancini	OK
06/25/04	Kent McKinney	OK
06/30/04	Dorinda Mancini	OK
07/01/04	Kent McKinney	OK

2004 Land Treatment Unit Inspection

07/07/04	Dorinda Mancini	OK
07/08/04	Kent McKinney	OK
07/14/04	Darren Joe	OK
07/22/04	Kent McKinney	OK
07/22/04	Darren Joe	OK
07/28/04	Darren Joe	OK
07/29/04	Kent McKinney	OK
08/03/04	Darren Joe	OK
08/11/04	Darren Joe	OK
08/12/04	Kent McKinney	OK
08/18/04	Darren Joe	OK
08/19/04	Kent McKinney	OK
08/25/04	Darren Joe	OK
08/26/04	Kent McKinney	OK
09/01/04	Darren Joe	OK
09/08/04	Darren Joe	OK
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09/15/04	Darren Joe	OK
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11/04/04	Kent McKinney	OK
11/10/04	Darren Joe	OK
11/11/04	Kent McKinney	OK
11/17/04	Darren Joe	OK
11/18/04	Kent McKinney	OK
11/24/04	Darren Joe	OK
12/01/04	Darren Joe	OK
12/02/04	Kent McKinney	OK
12/08/04	Darren Joe	OK
12/15/04	Darren Joe	OK
12/22/04	Darren Joe	OK
12/29/04	Darren Joe	OK



NEW MEXICO ENVIRONMENT DEPARTMENT HAZARDOUS WASTE BUREAU

2004 ANNUAL HAZARDOUS WASTE FEE REPORT

Note: Complete and return this report with your invoice and payment

SECTION I: FACILITY INFORMATION AND IDENTIFICATION

Facility Name: Giant Refing Company - Ciniza Refinery

EPA Identification Number: NMD000333211 Phone: 505-722-0217

Facility Address: Interstate 40, Exit 39, 17 miles east of Gallup, Jamestown NM 87347

Mailing Address: Route 3, Box 7 Gallup, NM 87301

Facility Contact: Ed Riege

Title: Environmental Superintendent

Reporting Date: 15-Jul-05

The New Mexico Hazardous Waste Generation Fee is comprised of two parts: a Business Fee and a Generation Fee. The Business Fee is determined by your generator status and the Generation Fee is determined by the amount of non-recycled hazardous waste, which is generated by the facility. It is important to note that your generator status is determined by adding the recycled and non-recycled hazardous waste generated by your facility each month.

Detailed regulations covering the annual hazardous waste fees are defined at 20.4.3 NMAC.

SECTION II: ANNUAL GENERATION CALCULATIONS

To calculate the annual waste generation amounts, use the schedule below. Enter the total pounds of hazardous waste generated per month and then subtract the pounds of recycled hazardous waste per month. The difference is the amount of non-recycled hazardous waste generated.

Calendar Year: 2004					
Month	Total Hazardous Waste (lb)		Recycled (lb)		Non-Recycled (lb)
January	3600	-	3600	=	0
February		-		=	
March	15214	-	0	=	15214
April	2200	-	2200	=	0
May		-		=	
June		-		=	
July	1089	-	0	=	1089
August		-		=	
September		-		=	
October	64119	-	54680	=	9439
November	35240	-	35240	=	0
December	19005	-	0	=	19005
Annual Totals	140467	-	95720	=	44747

SECTION III: GENERATION STATUS DETERMINATION

Determine your generator status using the largest amount of total hazardous waste generated during any one calendar month (from first column in Section II).

GENERATOR STATUS:

- * If you generate 220 lbs (100 kg) or less of hazardous waste (recycled and non-recycled) in any one month, you are a Conditionally Exempt Small Quantity Generator (CESQG).
- * If you generate more than 220 lbs (100 kg) but less than 2,206 lbs (1,000 kg) of hazardous waste (recycled and non-recycled) in any one month, you are a Small Quantity Generator (SQG).
- * If you generate more than 2,205 lbs (1,000 kg) of hazardous waste (recycled and non-recycled) in any one month, you are a Large Quantity Generator (LQG).

NOTE: IF YOU ARE A CESQG, YOU DO NOT OWE ANY FEES. PLEASE COMPLETE THE CERTIFICATION SECTION OF THIS FORM AND RETURN TO OUR OFFICE.

SECTION IV: BUSINESS FEES

Based on the generator status determined from Section III, check the appropriate category for this facility and pay the appropriate Business Fee.

Conditional Exempt Small Quantity Generator	.....	no fees due
Small Quantity Generator	.....	\$ 200.00
Large Quantity Generator	 X	\$2,500.00

SECTION V: ANNUAL GENERATION FEES

1. Conditionally Exempt Small Quantity Generators do not owe any annual generator fees.
2. Small Quantity Generators shall pay the following fees based on the average monthly amount of non-recycled hazardous waste generated.

Annual total non-recycled hazardous waste from Section II divided by twelve equals monthly average

_____ lb / 12 = _____ pounds per month

1 - 500 pounds/month	.....	\$ 35.00
501 - 1,000 pounds/month	.....	\$ 100.00
1,001 - 2,205 pounds/month	.....	\$ 250.00

If < 2,206 pounds/month, enter appropriate fee \$ _____

3. Large Quantity Generators at a site shall pay the following fees for non-recycled hazardous waste generated for the reporting year, if both hazardous waste and hazardous wastewater were generated at the site, the generator must determine the amounts for each to calculate the fee. Use the following fee schedules for these calculations.

- a. \$ 0.01 per pound of non-recycled hazardous waste generated at the site.

_____ 44747 _____ pounds for the reporting year X \$ 0.01 = \$ _____ 447.47 _____

and

- b. \$ 0.01 per ton of wastewater designated a hazardous waste solely because it exhibits a hazardous characteristic.

_____ tons for reporting year X \$ 0.01 = \$ _____

Total LQG annual fee (a + b) = \$ _____ 447.47 _____

SECTION VI: PAST DUE FEES

Fees owed for previous years are calculated the same as above and are then multiplied by 1%. The **sum** of the annual business fee (Section IV) and the generation fee (Section V) are **multiplied** by the number of months that the fee is past due:

$$\text{Business Fee} + \text{Generation} \times 1\% \times \text{Number of months past due} = \text{Late Fee}$$

$$\text{Example: } (\$200 + \$35) \times 0.01 \times 10 \text{ Months} = \$23.50$$

This late fee is added to the business fee, the generation fee, and the administration charge of \$100 to determine the total past due fee owed for that year:

$$\text{Business Fee} + \text{Generation} + \text{Late Fee} + \$100 = \text{Total Past Due Fee}$$

$$\text{Example: } \$200.00 + \$35.00 + \$23.50 + \$100.00 = \$358.50$$

If you are paying past due fees for multiple years, you pay the administration charge one time only. The fees for each year are due on August 1st of the following year.

Example: Fees for 2003 were due on August 1, 2004. Please calculate past due fees and enter them below:

2001 Fees	.....	\$	.....
2002 Fees	.....	\$	.....
2003 Fees	.....	\$	.....
Administrative Fee	.....	\$	100.00
Total Past Due Fees Owed	.....	\$	.....

SECTION VII: CAP FEES

CAP Fees: The aggregate amount of annual generation and business fees to be paid per person [as defined at 20.4.3.107(B)(12) NMAC] for any year based on this Part (20.4.3 NMAC) shall be limited to:

One facility	.....	\$35,000.00
Two facilities	.....	\$50,000.00
Three or more facilities	.....	\$65,000.00

If your facility generates non-recycled hazardous waste in amounts which will result in a total fee greater than the amounts given in the above table, you only pay the CAP Fee indicated. These CAP Fees does not apply to late fees.

SECTION VIII: TOTAL FEES DUE

Total Fees (Business Fees, Generation Fees)	2947.47
Owed for Current Calendar Year	_____
Total Past Due Fees Owed (if applicable)	_____
TOTAL FEES	\$2,947.47

SECTION IX: CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents. I hereby certify that either based on my personal knowledge or my inquiry of those individuals immediately responsible for obtaining the information, the submitted information is true, accurate and complete. I hereby acknowledge that any person who knowingly omits information from or makes any false statement or representation in a fee report may be subject to criminal penalties under the Act.

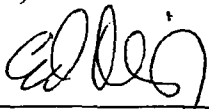
Ed Rios

Name (printed or typed)

General Manager

Title

Signature



7/15/2005

Date

This report must be completed and returned to the address listed below. Make your cashiers check or money order for the full amount due payable to the NMED Hazardous Waste Fund and mail it to:

**NMED - Hazardous Waste Bureau
2905 Rodeo Park Drive East, Bldg. 1
Santa Fe, New Mexico 87505**

State of New Mexico Environment Department
Hazardous Waste Bureau
Annual Hazardous Waste Fees



Report #: NMD000333211-2401-CY2004

Facility Mailing Address:
GIANT REFINING CO. - CINIZA REFINERY
ROUTE 3, BOX 7
GALLUP, NM 87301

Please provide current Owner information below.

Owner Name: Giant Industries Arizona, Inc.
Address: 23722 N. Scottsdale Rd
Scottsdale AZ 85255

Facility Location Address:
INTERSTATE 40, EXIT 39 - 17 MILES EAST OF
JAMESTOWN, NM 87347

This is the NMED annual notice for hazardous generation and business fees applicable to all facilities classified as Small Quantity Generators (SQG), Large Quantity Generator (LQG), Treatment, Storage, or Disposal (TSD) including Closure and Post-Closure Care. The fee regulations are promulgated pursuant to the provisions of New Mexico Hazardous Waste Act, Chapter 74, Article 4, NMSA (as amended). Fees are due AUGUST 1, 2005 for waste generated during calendar year 2004.

If you have any questions or concerns please contact Charlotte Duran at (505) 428-2508.

Calendar Year

Total amount generated

How many lbs/tons were recycled?

Amount generated from spill cleanup

2004
140,467 lbs/tons (circle one)
95,720 lbs/tons (circle one)
_____ lbs/tons (circle one)

FEE SUMMARY: (from Annual Hazardous Waste Fee Report)

Generation Fee Amount

\$ 447.47

Business Fee Amount

\$ 2500.00

Late Fee Amount

\$ _____

CAP Fee Paid

\$ _____

TOTAL AMOUNT DUE

\$ 2947.47

Special Instructions:

- Please include your report # on your remittance check.
- Complete and return this invoice with your Annual Hazardous Waste Fee report.
- Retrieve your Hazardous Waste Fee Report at <http://www.nmenv.state.nm.us/hwb/notifiers.html>. If you are unable to retrieve this report, please contact Charlotte Duran at (505) 428-2508 for a hard copy.
- Submit your remittance and report to:

NMED/HWB
New Mexico Environment Dept/HWB
Attn: Charlotte Duran
2905 Rodeo Park Drive East
Santa Fe, NM 87505

GIANT**INDUSTRIES, INC.**23733 N. Scottsdale Rd.
Scottsdale, AZ
85255-9969480
585-8888Page : 1 Check # : 217645
Vendor # : 76707 Check Date : 7/18/2005

Date	Invoice Number	Description	Gross	Discount	Net
7/18/2005	NM000333211-2401-CY2004		2,947.47	0.00	2,947.47

JUL 19 2005

Total: \$2,947.47

THE FACE OF THIS CHECK IS PRINTED BLUE. THE BACK CONTAINS A SIMULATED WATERMARK

GIANT
INDUSTRIES, INC.

23733 N. Scottsdale Rd.
Scottsdale, AZ
85255-9969
480
585-8888

Bank of America
Bank of America
North Carolina

66-19
530

Valid for 180 Days From Date of Issue

Date 7/18/2005

Check No. 217645

\$ *****2,947.47
Amount

Pay
Two thousand nine hundred forty seven and 47/100 Dollars

To the Order of
NMED / HRMB
Hazardous Waste Bureau
2905 Rodeo Park Dr E Bldg 1
PO Box 26110
Santa Fe NM 87502

Fredric L. Halliger

⑈00217645⑈ ⑈053107989⑈ 000480149594⑈



BILL RICHARDSON
GOVERNOR

State of New Mexico
ENVIRONMENT DEPARTMENT

Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, New Mexico 87505-6303
Telephone (505) 428-2500
Fax (505) 428-2567
www.nmenv.state.nm.us



RON CURRY
SECRETARY

DERRITH WATCHMAN-MOORE
DEPUTY SECRETARY

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

October 20, 2004

Ed Riege,
Environmental Superintendent
Giant Refining Company-Ciniza
Route 3 Box 7
Gallup, NM 87301

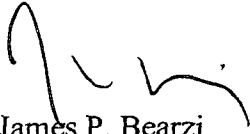
SUBJECT: HAZARDOUS WASTE BUREAU GPS/GIS SURVEY

Dear Mr. Riege:

The New Mexico Environment Department's Hazardous Waste Bureau (HWB) is conducting a survey of the Global Positioning System (GPS) and Geographic Information System (GIS) technologies currently being used by New Mexico's hazardous waste treatment, storage, and disposal facilities. The HWB anticipates constructing a database and GIS of New Mexico's hazardous waste treatment, storage, and disposal facilities. Please complete the enclosed survey and return it to Ms. Cheryl Frischkorn at the address listed above. Completion and submission of the enclosed survey by December 24, 2004 would be greatly appreciated. This survey will also be posted on the HWB Internet site located at <http://www.nmenv.state.nm.us/hwb/>. HWB will be compiling this information by January 14, 2005. If you have any questions regarding this survey, please contact Cheryl Frischkorn of my staff at cheryl_frischkorn@nmenv.state.nm.us or (505) 428-2550.

Ed Riege
October 20, 2004
Page 2

Sincerely,



James P. Bearzi
Chief
Hazardous Waste Bureau

JPB:caf

cc: J. Kieling, NMED HWB
C. Frischkorn, NMED HWB
H. Monzeglio, NMED HWB

File: Giant Refining Company-Ciniza Reading

MAILED 11-17-04
[Signature]

HAZARDOUS WASTE BUREAU GPS/GIS SURVEY

Facility Name Giant Refinery - Ciniza
Facility EPA ID NMD 0000 3332 11
GPS/GIS Contact Ed Riege

1) How are your regulated sites currently being surveyed? (CIRCLE ALL THAT APPLY)

- a) traditional survey equipment (transit)
- b) GPS (Global Positioning System)--- recreational grade
- c) GPS---mapping grade
- ☒ d) GPS---survey grade
- e) other (please indicate) _____

2) What other surveying technologies have been used to locate regulated sites in the past? (CIRCLE ALL THAT APPLY)

- ☒ a) traditional survey equipment (transit)
- b) GPS---recreational grade
- c) GPS---mapping grade
- d) GPS---survey grade
- e) other (please indicate) _____

3) If the facility is currently using GPS technology, indicate the equipment manufacturer and model of the receiver(s) being used.

Acquired with JENA MRB Aerial Camera

4) What coordinate system is currently being used by the facility? (CIRCLE ONE)

- ☒ a) state plane coordinate system
- ☐ b) latitude/longitude
- c) Universal Transverse Mercator (UTM)
- d) other (please indicate) _____

5) What horizontal datum is currently being used? (CIRCLE ONE)

- a) NAD27
- ☒ b) NAD83
- c) WGS84
- d) other (please indicate) _____

6) What is the estimated horizontal position accuracy for features currently being surveyed? (CIRCLE ONE)

- a) > 10 meters
- b) 5 to 10 meters
- c) 1 to 5 meters
- ☒ d) < 1 meter
- e) other (please indicate) _____

8) Does the facility currently utilize any geographical information systems (GIS)? If yes, please indicate software manufacturer and version used. *No*

9) (OPTIONAL) Please provide a general description of the GIS layers created and/or utilized by the facility (e.g., SWMU layer, monitoring well layer, soil association layer, etc). Use additional sheets as needed.

10) What format or type of spatial data does your facility work with (e.g., shape files, excel files, etc.) *Excel files*

11) Are personnel trained in collecting geospatial data using GPS technologies? Please describe training required. *No*

12) Please include any additional information that may be helpful to this survey.



New Mexico
Environment Department
Hazardous Waste Bureau

Giant Refining Company
Ciniza
Rt. 3 Box 7
Gallup, NM 87301
Attn: Randy Schmaltz

7/1/2005

Invoice # - HWB-GRC-C-AUA-2004
ANNUAL UNIT AUDIT -- CALENDAR YEAR 2004

Quantity	Item	Item Cost	Total Cost
14	Corrective Action	\$250.00	\$3,500.00
1	Post-Closure Care	\$2,000.00	\$2,000.00
		Total Fees	\$5,500.00
		Adjustment	\$0.00
		Pay This Amount	\$5,500.00

208-2450

OK to pay,
E/R
7-15-05

Make Checks Payable to: NMED/HWB

Mail Checks and Invoice to:

New Mexico Environment Department, HWB
Attn: Linda Montoya
2905 Rodeo Park Drive East, Bldg 1
Santa Fe, NM 87505

State of New Mexico Use Only:

Date Received: _____
Check Number: _____
Amount Received: _____

GIANT

INDUSTRIES, INC.

23733 N. Scottsdale Rd.
Scottsdale, AZ
85255-9969480
585-8888Page : 1 Check # : 217644
Vendor # : 76707 Check Date : 7/18/2005Date Invoice Number
7/1/2005 HWB-GRC-C-AUA-2004

Description	Gross	Discount	Net
	5,500.00	0.00	5,500.00

JUL 19 2005

Total: \$5,500.00

THE FACE OF THIS CHECK IS PRINTED BLUE - THE BACK CONTAINS A SIMULATED WATERMARK

GIANT

INDUSTRIES, INC.

23733 N. Scottsdale Rd.
Scottsdale, AZ
85255-9969480
585-8888

Date 7/18/2005

Bank of America
Bank of America
North Carolina

66-19

530

Valid for 180 Days From Date of Issue

\$ 5,500.00
Amount

Check No. 217644

Pay

Five thousand five hundred and 00/100 Dollars

To the Order of

NMED / HRMB

Hazardous Waste Bureau
2905 Rodeo Park Dr E Bldg 1
PO Box 26110
Santa Fe NM 87502*Fredric L. Halliger*

⑈00217644⑈ ⑆053107989⑆ 000480149594⑈

TABLE A
Giant Refining Company - Ciniza 2004 AUA
OPERATING, CLOSURE AND POST-CLOSURE CARE UNITS

Unit ID No.	Unit Type/Description	Process	Comments	Fee
LDF 1	Land Farm Not Clean Closed	Post-Closure		\$2,000.00
Total Annual Fee:				\$2,000.00

TABLE B
Giant Refining Company - Ciniza 2004 AUA
CORRECTIVE ACTION UNITS

Count	Unit ID No.	Unit Type/Description	Comments	Fee
1	SWMU 1	Aeration Basin		\$250.00
2	SWMU 2	Evaporation Ponds		\$250.00
3	SWMU 3	Empty Container Storage Area		\$250.00
4	SWMU 4	Old Burn Pit		\$250.00
5	SWMU 5	Landfill Areas		\$250.00
6	SWMU 6	Tank Farm		\$250.00
7	SWMU 7	Fire Training Area		\$250.00
8	SWMU 8	Railroad Rack Lagoon		\$250.00
9	SWMU 9	Drainage Ditch Near Inactive Landfarm		\$250.00
10	SWMU 10	Sludge Pits		\$250.00
11	SWMU 11	Secondary Oil Skimmer		\$250.00
12	SWMU 12	Contact Wastewater Collection System		\$250.00
13	SWMU 13	Drainage Ditch between N & S Evaporation		\$250.00
14	SWMU 14	API Separator		\$250.00
Total Annual Fee:				\$3,500.00

TABLE C
Giant Refining Company - Ciniza 2004 AUA
SUMMARY OF UNITS AND FEE ASSESSMENT

Number of Units	Unit Type	Fee
0	Storage	\$0.00
0	Treatment	\$0.00
0	Disposal	\$0.00
1	Post Closure Care	\$2,000.00
14	Corrective Action	\$3,500.00
Total Annual Fee:		\$5,500.00

CINIZA REFINERY WELL & BORING LOCATIONS

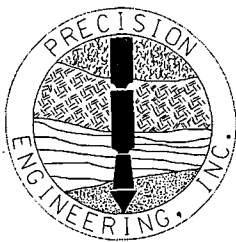


1" = 500'



COLOR CODE: SMO/ELA WELLS
CHIMLE/ALLUVIUM INTERFACE WELLS
UPPER SAND WELLS
RAW WATER PRODUCTION WELL

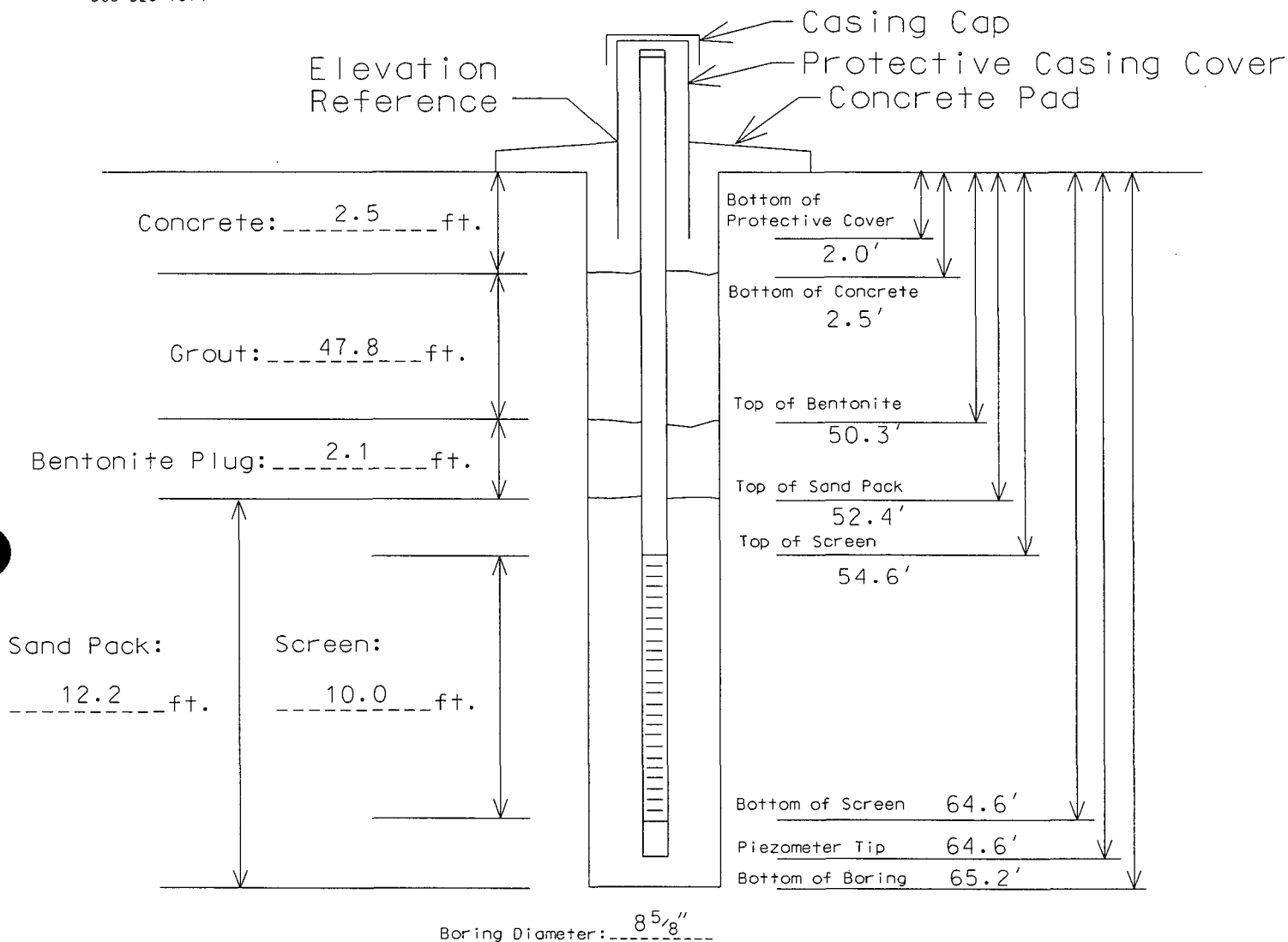
NOTE: CLOSED = ABANDONED



505-523-7674

Installation Diagram

Monitoring Well No. BW-1



Sand Type: 20-40 Silica

Bollards, Type/Size: 3" Dia. Steel, Conc. Filled

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: 6% Bentonite

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Other: N/A

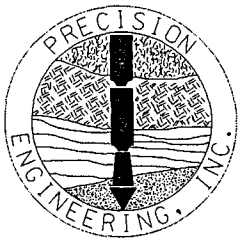
Bottom Cap Used? Yes

Site Easting: TBS

Project #: 03-118

Project Name: Ciniza Refinery - Boundry Wells

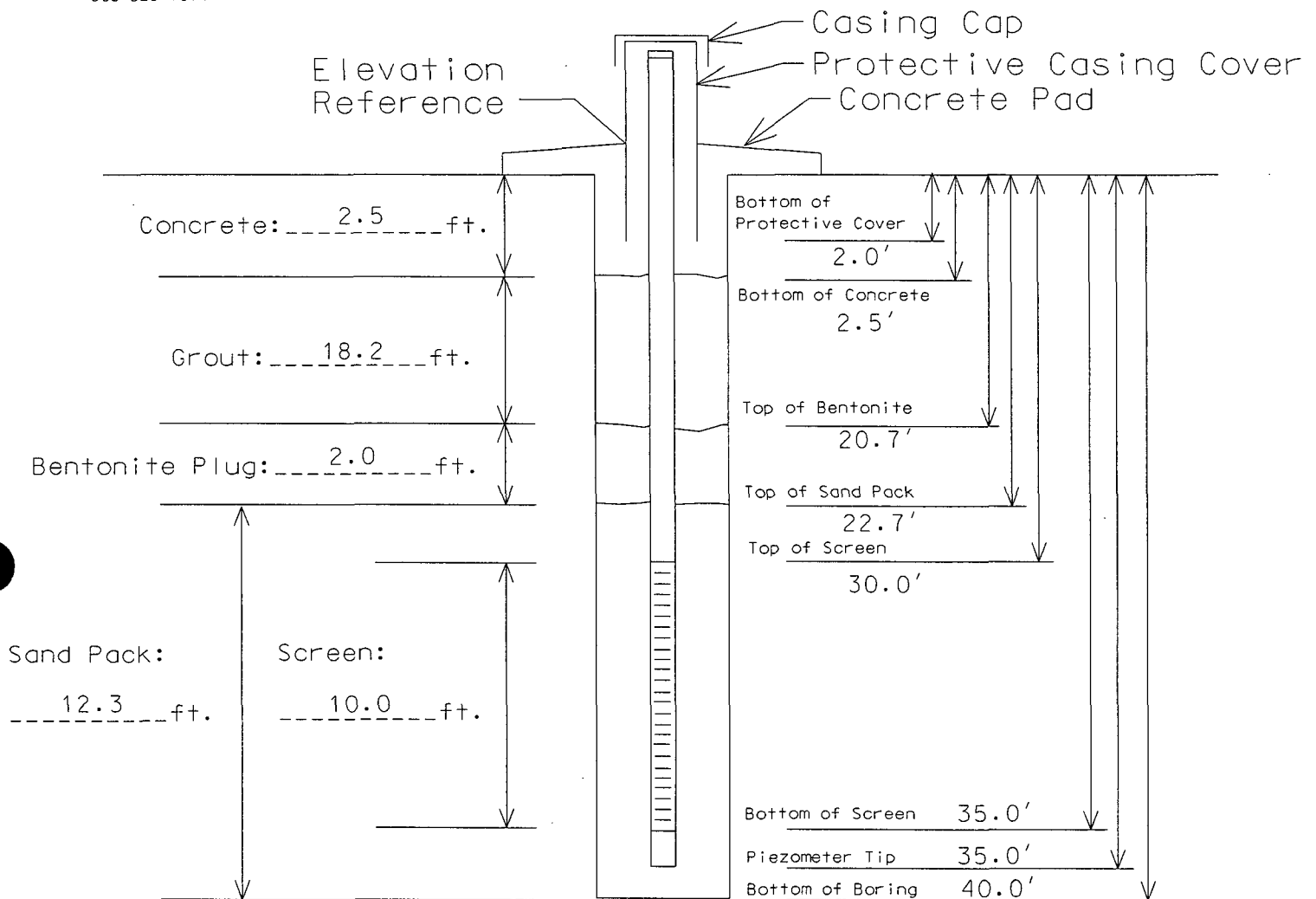
Elevation: TBS



505-523-7674

Installation Diagram

Monitoring Well No. BW-1A



Boring Diameter: 8 5/8"

Sand Type: 20-40 Silica

Bollards, Type/Size: 3" Dia. Steel, Conc. Filled

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: 6% Bentonite

Riser Type/Size: 2" PVC Sch. 40

Water: Potable
Backfilled w/
Bentonite 35'-37'
Clay 37'-40'
Other: _____

Locking Expandable Casing Plug? Yes

Site Northing: TBS

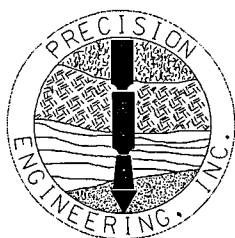
Bottom Cap Used? Yes

Site Easting: TBS

Project #: 03-118

Project Name: Ciniza Refinery - Boundry Wells

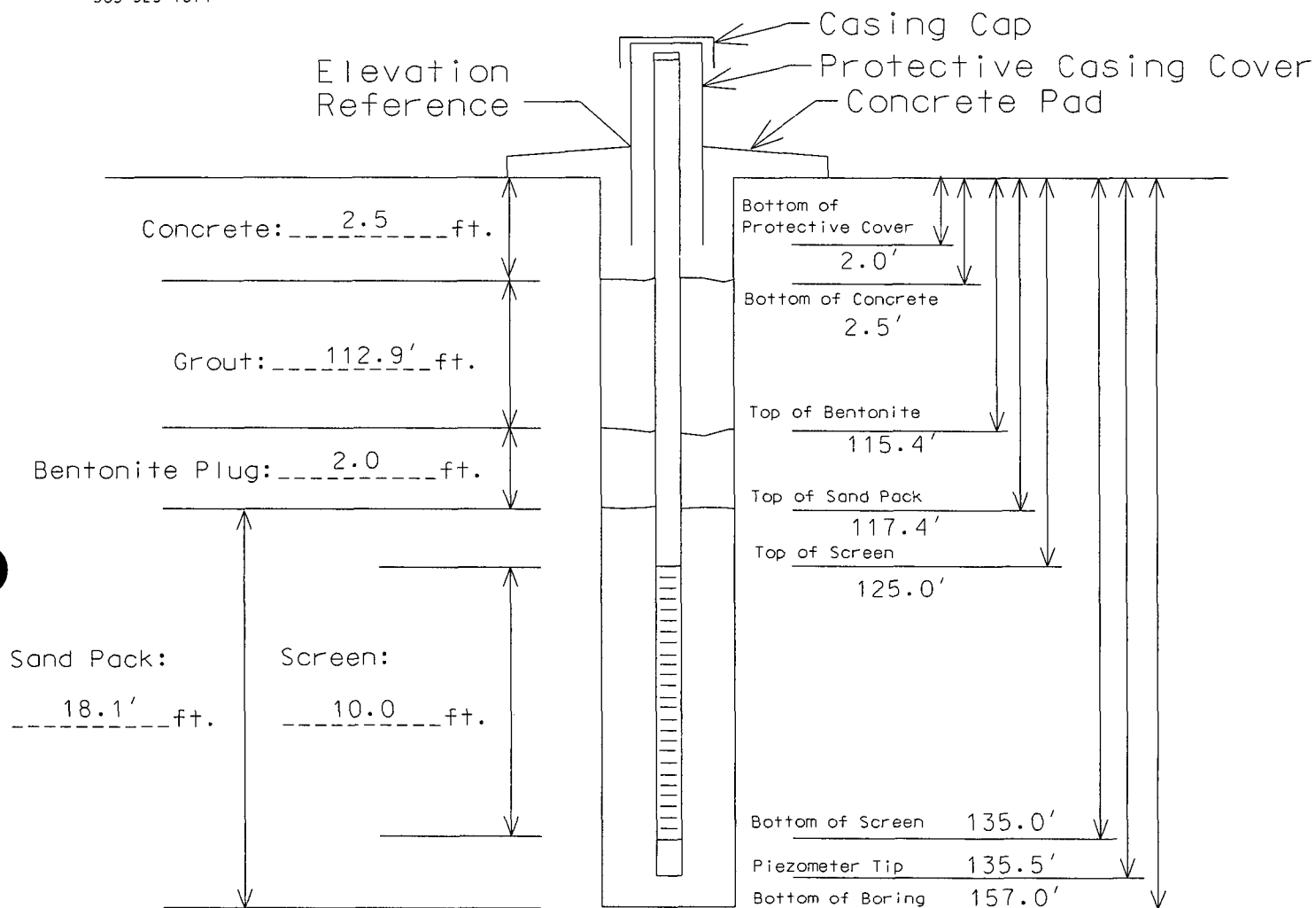
Elevation: TBS



505-523-7674

Installation Diagram

Monitoring Well No. BW-1C



Boring Diameter: 8 5/8"

Sand Type: 20-40 Silica

Bollards, Type/Size: 3" Dia. Steel, Conc. Filled

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: 6% Bentonite

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Other: N/A

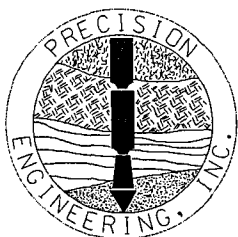
Bottom Cap Used? Yes

Site Easting: TBS

Project #: 03-118

Project Name: Ciniza Refinery - Boundry Wells

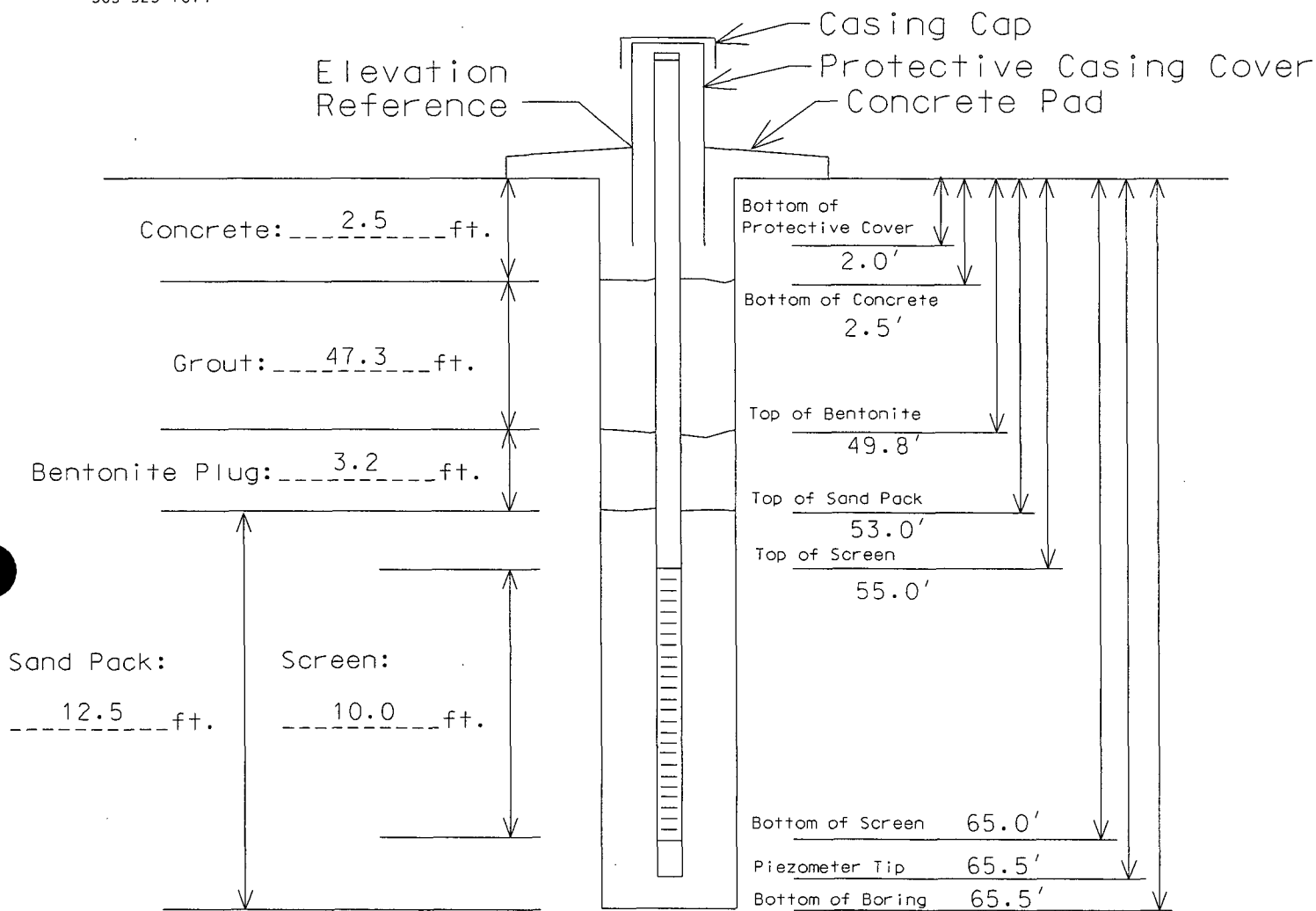
Elevation: TBS



505-523-7674

Installation Diagram

Monitoring Well No. BW-2A



Boring Diameter: 8⁵/₈"

Sand Type: 10-20 Silica

Bollards, Type/Size: 3" Dia. Steel, Conc. Filled

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: 6% Bentonite

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes Site Northing: TBS

Other: N/A

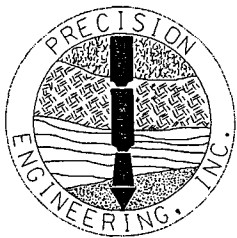
Bottom Cap Used? Yes

Site Easting: TBS

Project #: 03-118

Project Name: Ciniza Refinery - Boundry Wells

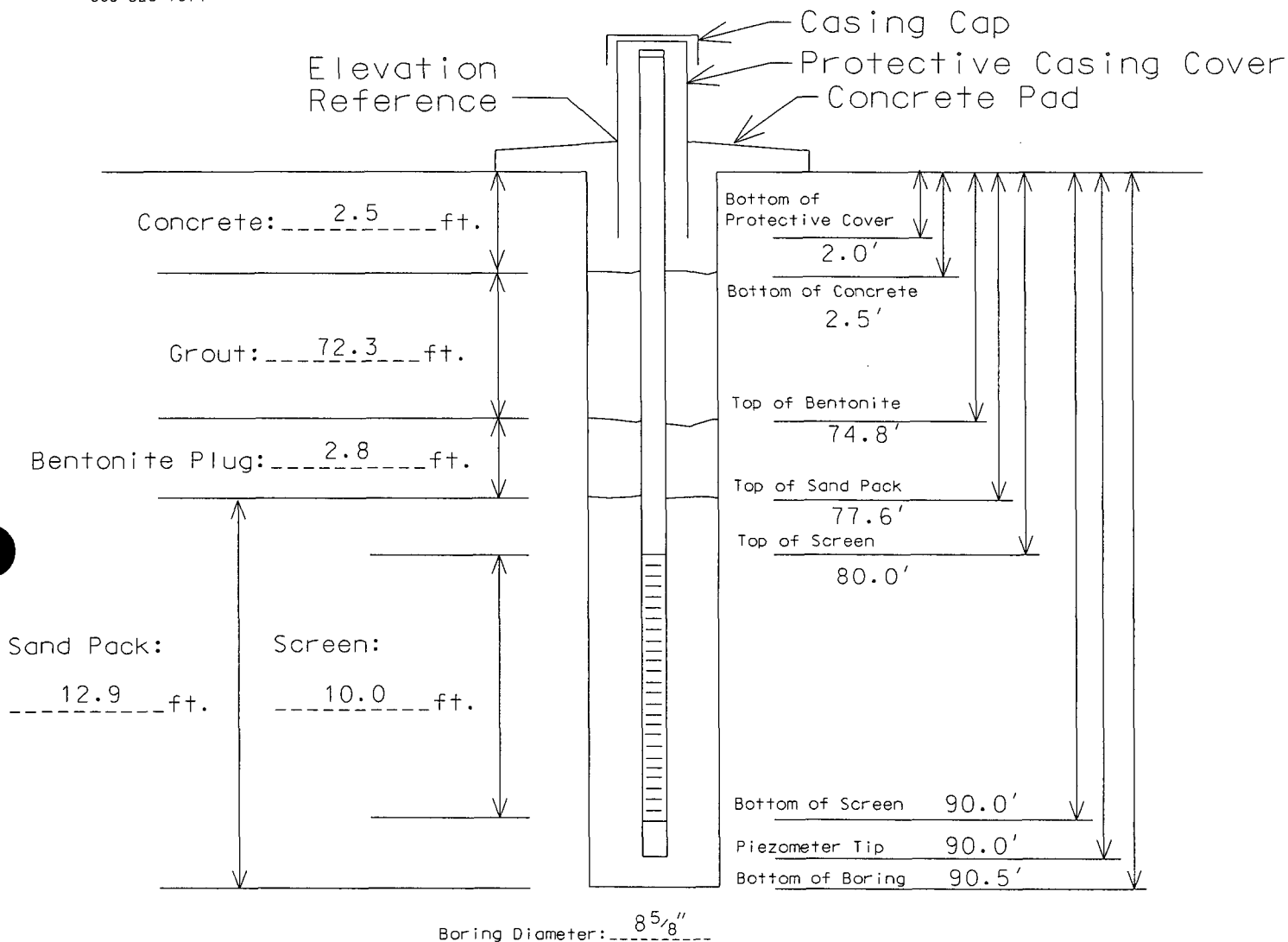
Elevation: TBS



505-523-7674

Installation Diagram

Monitoring Well No. BW-2



Sand Type: 20-40 Silica
3/8" Stabilized
Bentonite: Pellets (TR-30)

Bollards, Type/Size: 3" Dia. Steel, Conc. Filled
Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: 6% Bentonite

Riser Type/Size: 2" PVC Sch. 40

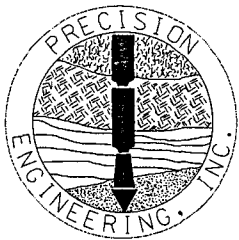
Water: Potable

Locking Expandable Casing Plug? Yes Site Northing: TBS

Other: N/A

Bottom Cap Used? Yes Site Easting: TBS

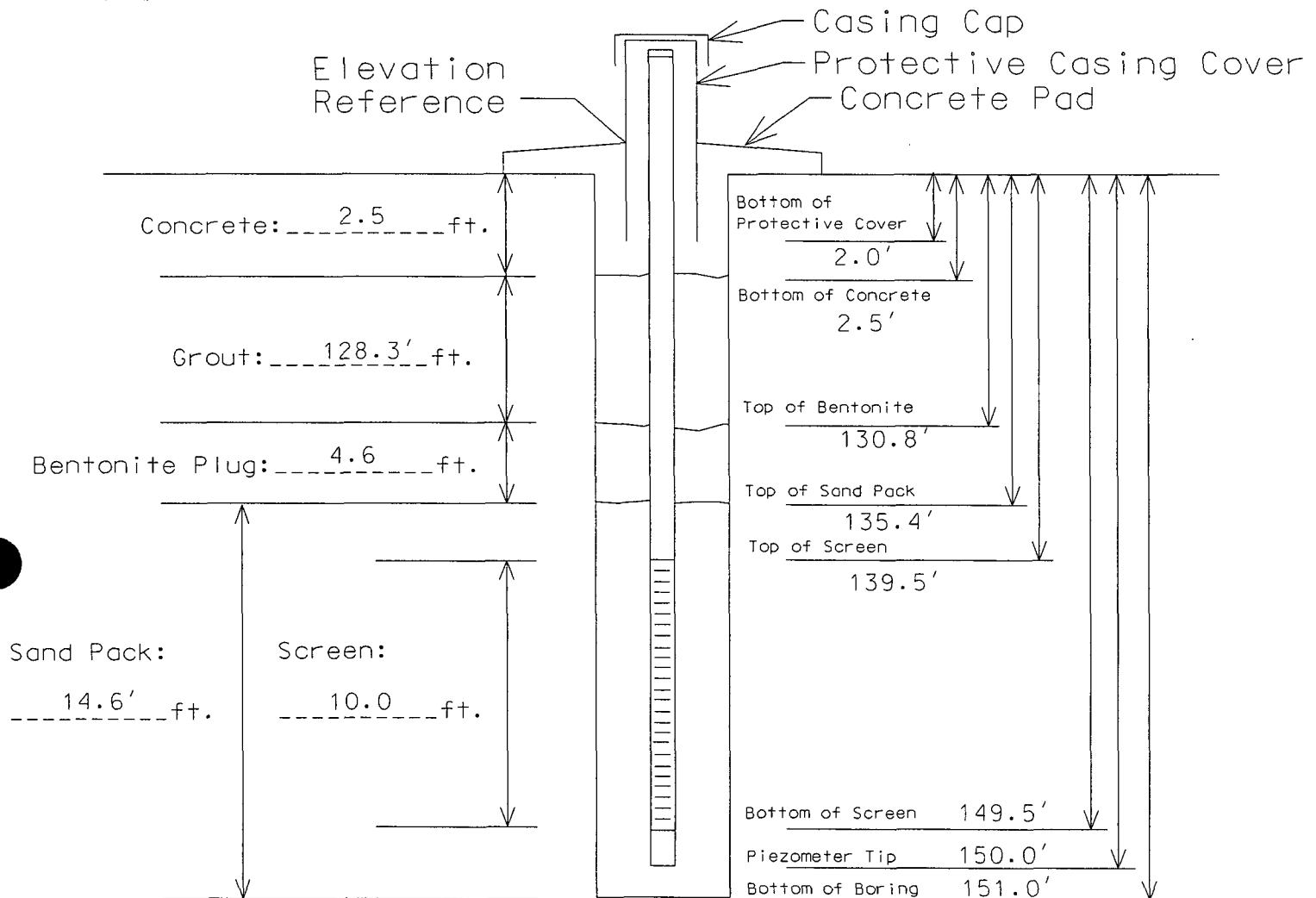
Project #: 03-118 Project Name: Ciniza Refinery - Boundry Wells Elevation: TBS



505-523-7674

Installation Diagram

Monitoring Well No. BW-2C



Boring Diameter: 8⁵/₈"

Sand Type: 20-40 Silica

Bollards, Type/Size: 3" Dia. Steel, Conc. Filled

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: 6% Bentonite

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Other: N/A

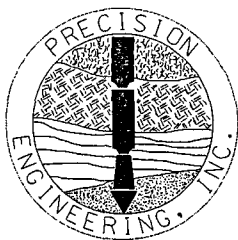
Bottom Cap Used? Yes

Site Easting: TBS

Project #: 03-118

Project Name: Ciniza Refinery - Boundry Wells

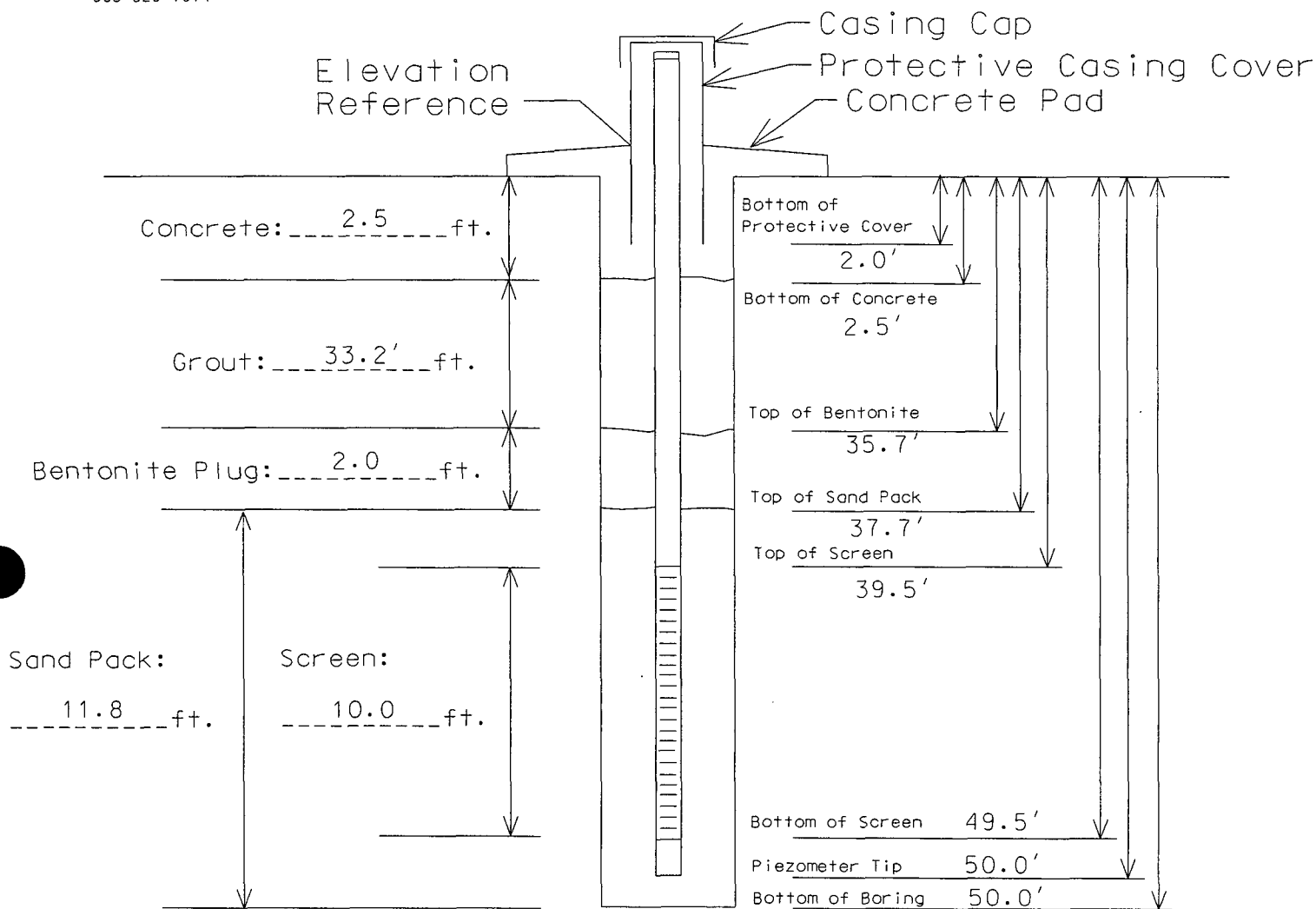
Elevation: TBS



505-523-7674

Installation Diagram

Monitoring Well No. BW-3A



Boring Diameter: 8 5/8"

Sand Type: 20-40 Silica

Bollards, Type/Size: 3" Dia. Steel, Conc. Filled

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: 6% Bentonite

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

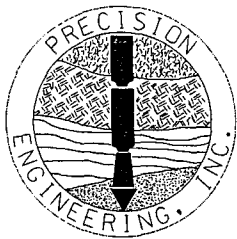
Bottom Cap Used? Yes

Site Easting: TBS

Project #: 03-118

Project Name: Ciniza Refinery - Boundry Wells

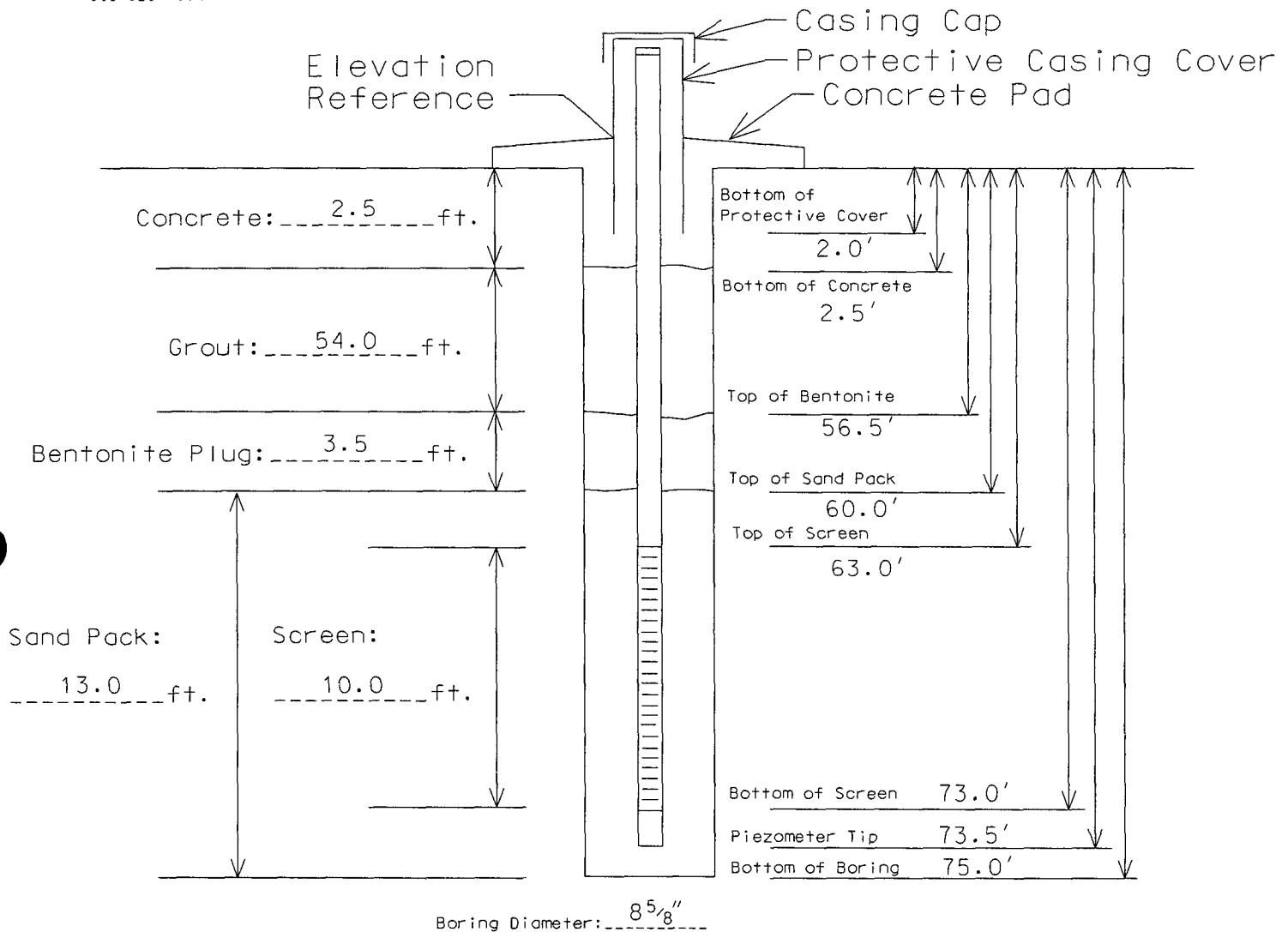
Elevation: TBS



505-523-7674

Installation Diagram

Monitoring Well No. BW-3



Sand Type: 20-40 Silica

Bollards, Type/Size: 3" Dia. Steel, Conc. Filled

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: 6% Bentonite

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Backfill w/ 3/8" Bentonite
Other: Chips to 73.0'

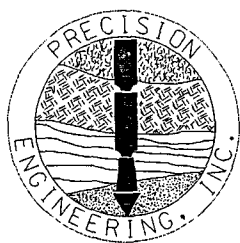
Bottom Cap Used? Yes

Site Easting: TBS

Project #: 03-118

Project Name: Ciniza Refinery - Boundry Wells

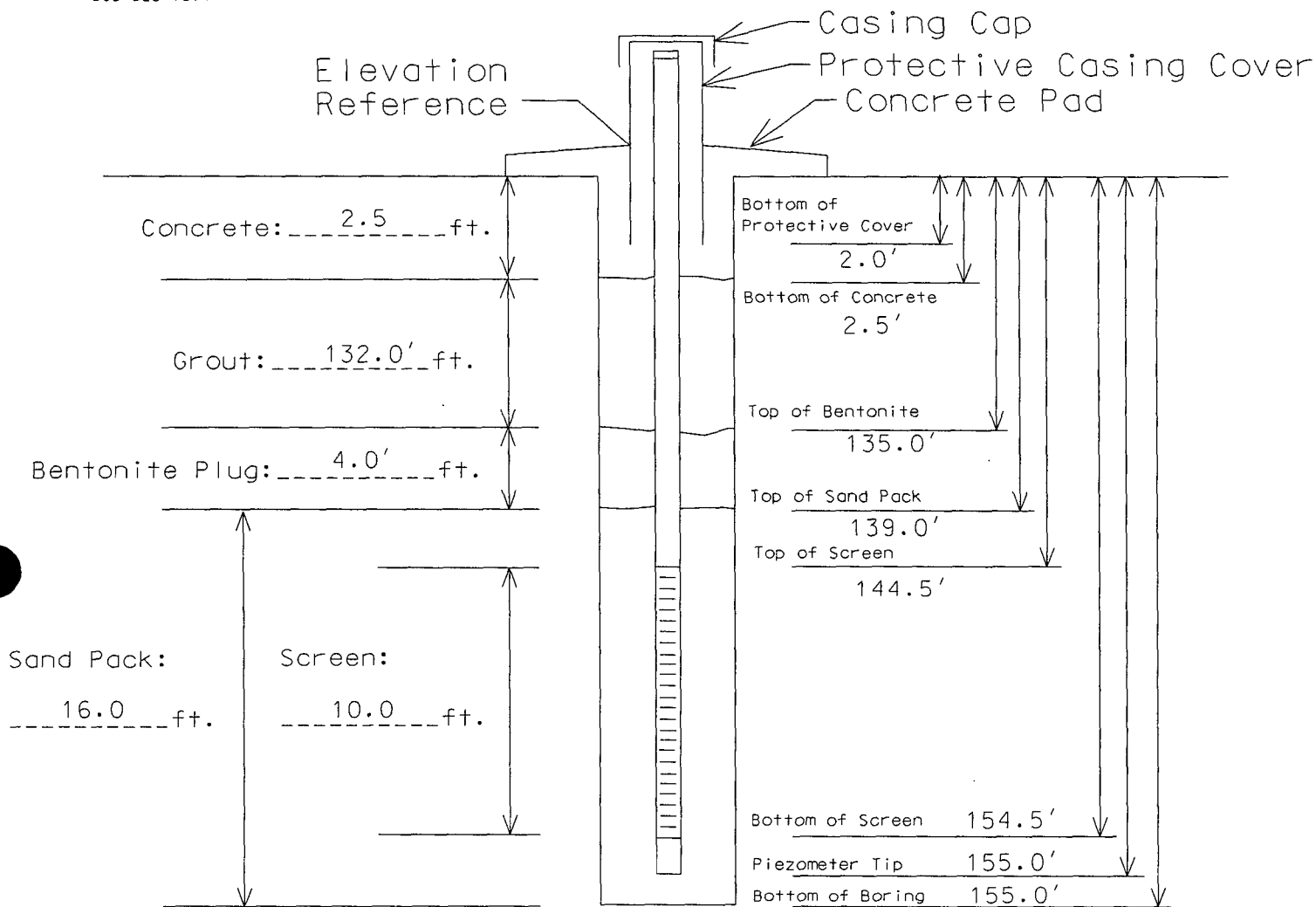
Elevation: TBS



505-523-7674

Installation Diagram

Monitoring Well No. BW-3C



Boring Diameter: 8 5/8"

Sand Type: 20-40 Silica

Bollards, Type/Size: N/A

Bentonite: 3/8" Chips

Screen Type/Size: 2" PVC Sch. 40, 0.010" Slotted

Cement/Grout: 6% Bentonite

Riser Type/Size: 2" PVC Sch. 40

Water: Potable

Locking Expandable Casing Plug? Yes

Site Northing: TBS

Other: N/A

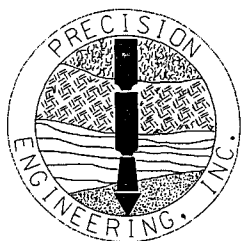
Bottom Cap Used? Yes

Site Easting: TBS

Project #: 03-118

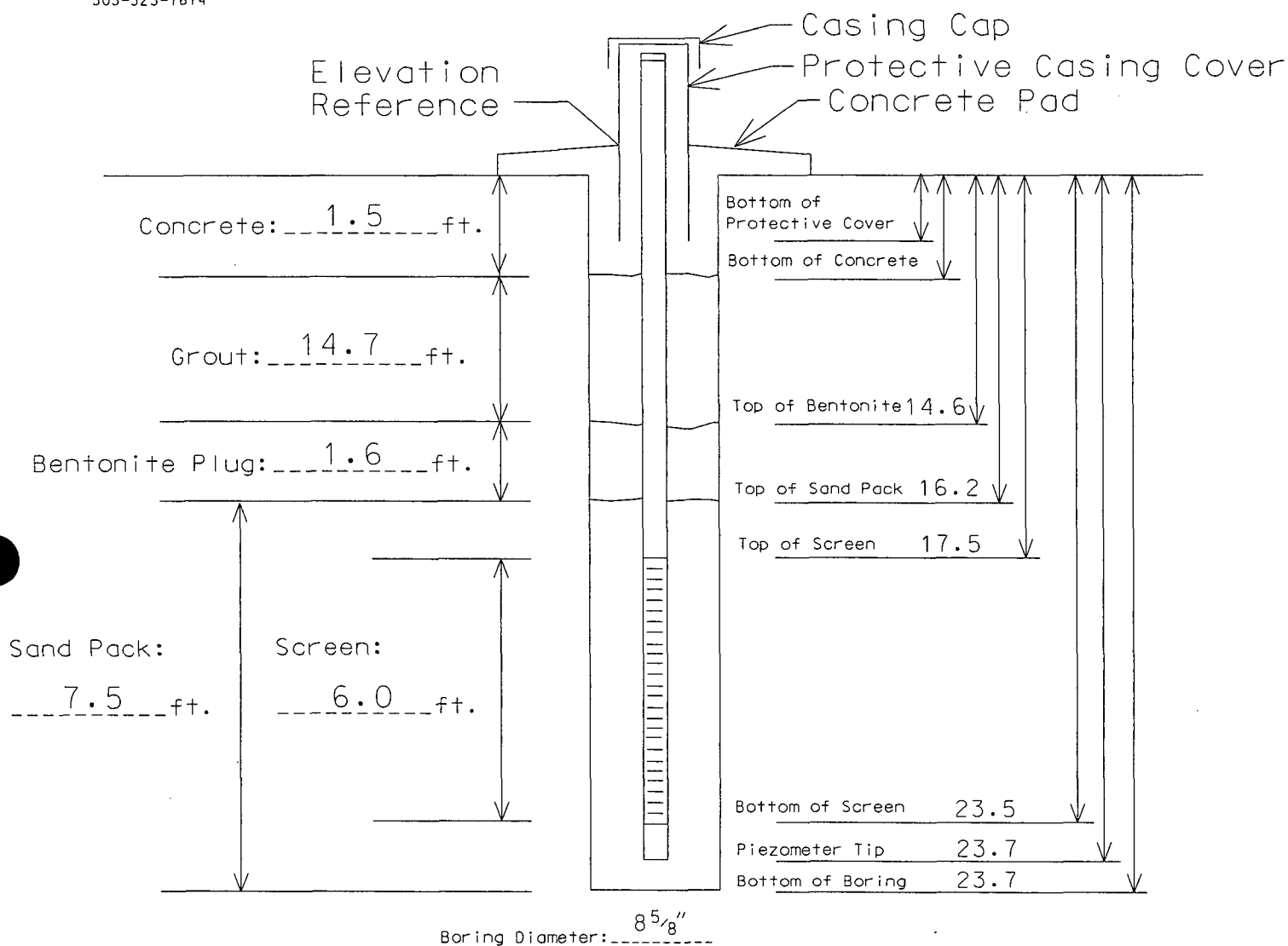
Project Name: Ciniza Refinery - Boundry Wells

Elevation: TBS



505-523-7674

Installation Diagram

Monitoring Well No. GWM-1Sand Type: 20-40 SILICABollards, Type/Size: NONE INSTALLEDBentonite: 3/8" CHIPSScreen Type/Size: 2", #10 SLOT, SCH 40 PVCCement/Grout: 6% BENTONITE/CEMENTRiser Type/Size: 2", SCH 40 PVCWater: NONELocking Expandable Casing Plug? YESSite Northing: TBDOther: ---Bottom Cap Used? YESSite Easting: TBDProject #: 03-118Project Name: POND 1 GROUNDWATER OBSERVATIONElevation: TBD

Water Elevation: Not Encountered

Boring No.: BW3A

Log of Test Borings

Elevation: Existing

Date: 6/15/2004

[illegible]

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

Water Elevation: Not Encountered

Boring No.: BW3A

Log of Test Borings

Elevation: Existing

Date: 6/15/2004

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			///////// ///////// ///////// /////////	22.0	<u>Clay</u> , red-brown, firm, blocky, moist, roots from 0-2'				
	24.3-24.6		*---*		<u>Silt</u> , sandy, light brown, firm, dry				
	24.6-25.0		----- -----	25.0	<u>Silt</u> , light brown, hard, moist				
	25.0-27.0		*---* *---* *---*		<u>Silt</u> , sandy, light brown, loose, dry				
	27.0-30.0		/- - /- - /- - /- - /- - /- - /- - /- - /- - /- - /- - /- - /- - /- -	30.0	<u>Silt</u> , some clay, mottled (silt is tan, clay is red-brown), hard, damp				
	30.0-35.0		// - // -	35.0	<u>Clay</u> , silty, red-brown, mottled, hard, moist				
	35.0-37.0		// - // - // - // - // - // - // - // - // -		<u>Clay</u> , silty, red-brown, mottled, hard, moist				
	37.0-40.0		///////// ///////// ///////// ///////// ///////// ///////// /////////	40.0	<u>Clay</u> , red-brown, hard, moist				
	40.0-41.0		/////////		<u>Clay</u> , red-brown, hard, moist, blocky				
	41.0-41.6		/- - /- -		<u>Silt</u> , clayey, red-brown mottled, firm, moist				
	41.6-42.0		-----		<u>Silt</u> , very fine sand, red-brown, soft, damp				
	42.0-43.0		***** ***** *****		<u>Sand</u> , very fine, some silt, tan grading to red-brown, loose, dry, siltier at bottom				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

Sheet: 3 OF 3
Bore Point: N. Ponds-see plan

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: Not Encountered
Boring No.: BW3A

Log of Test Borings

Elevation: Existing
Date: 6/15/2004

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	43.0-45.0		///////// ///////// /////////	43.5	<u>Clay</u> , some silt, red-brown, mottled, firm, moist horizontal laminations, coarsing upward to sand				
	45.0-46.7		**_**_** **_**_** **_**_** **_**_**	45.0	<u>Sand</u> , very fine, silty, red-brown, loose, damp				
	46.7-47.3		-----		<u>Silt</u> , red-brown, firm, damp				
	47.3-48.3		//-//-//-// //-//-//-//		<u>Clay</u> , silty, red-brown mottled, blocky, firm, moist				
	48.3-50.0		///////// ///////// ///////// /////////	50.0	<u>Clay</u> , red-brown, small amount of grey mottling, hard, wet, limonite at 49.0'				
					<u>T.D. 50.0</u>				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

Sheet: 5 OF 8
Bore Point: N. Ponds-see plan

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 6.9' bgs
Boring No.: BW3C

Log of Test Borings

Elevation: Existing
Date: 7/20/2004

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			///////// ///////// ///////// ///////// ///////// ///////// ///////// 90.0 ///////// ///////// ///////// ///////// /////////						
	92.0-94.0		***** ***** ***** *****		<u>Sand</u> , yellow-brown, hard, dry				
	94.0-105.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// 100.0 ///////// ///////// ///////// ///////// ///////// ///////// 105.0		<u>Mudstone/Siltstone</u> , yellow-brown, hard, dry				
	105-110.0		**/**/** **/**/** **/**/** **/**/** **/**/** **/**/**		<u>Sandstone</u> , mudstone, silt, interbedded, dense, dry				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: WHK

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 6.9' bgs
Boring No.: BW3C

Log of Test Borings

Elevation: Existing
Date: 7/20/2004

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			////////	130.0					
	130-155.0		*-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- <u>135.0</u> *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- <u>140.0</u> *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- <u>145.0</u>		<u>Mudstone/Siltstone/Sandstone</u> , interbedded, sandstone drills hard, white mudstone/Siltstone red-brown				
			*-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- <u>150.0</u> *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- *-/ */- <u>155.0</u>		<u>Sandstone</u> , weakly water bearing, white, hard, quartz				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: WHK

Sheet: 8 OF 8
Bore Point: N. Ponds-see plan

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 6.9' bgs
Boring No.: BW3C

Log of Test Borings

Elevation: Existing
Date: 7/20/2004

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			/-//- */*/*/- */*/*/- */*/*/- */*/*/- */*/*/- */*/*/- */*/*/-	155.0					
					T.D. 155.0'				
SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger									
LOGGED BY: WHK									

Sheet: OF 2
Bore Point: 12' West of BW1

Precision Engineering, Inc.
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File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: Not Encountered
Boring No.: BW1A

Log of Test Borings

Elevation: Existing
Date: 11/10/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			///////// ///////// ///////// ///////// /////////	22.0					
	24.5-24.7		*****		<u>Sand</u> , very fine, silty, dry, loose, light red-brown				
	24.7-26.5		/**/**/**/ /**/**/**/ /**/**/**/	25.0	<u>Clay</u> , very sandy, silty hard, damp, red-brown crumbly				
	26.5-28.5		**_**_**_ **_**_**_ **_**_**_ **_**_**_		<u>Sand</u> , very fine, silty, dry, slightly clayey, occasional < 1cm clay beds, loose-moderate dense, very light brown				
	28.5-30.5		/**/**/**/ /**/**/**/ /**/**/**/ /**/**/**/	30.0	<u>Clay</u> , slightly sandy, silty, firm-stiff, very light red-brown, damp, occasional laminar salt bed, dry, very crumbly in hand				
	30.5-31.3		/**/**/**/		<u>Clay</u> , sandy, gradational with above dry, stiff-hard, very light brown				
	31.3-32.3		/**/**/**/						
	32.3-32.9		*****		<u>Sand</u> , very fine, loose, silty, slightly clayey, moderate dense, very light brown, dry				
	32.9-33.2		/**/**/**/		<u>Clay</u> , slightly sandy, firm, dry, very light brown				
	33.2-35.0		/**/**/**/		<u>Clay</u> , slightly sandy, firm, dry, very light brown crumbles easily				
			*****		<u>Sand</u> , very silty, dry, very light brown, moderate, dense				
			/**/**/**/		<u>Clay</u> , slightly sandy, silty, hard, dry, crumbly, very light red-brown, gradational contacts				
	35.0-40.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// /////////	35.0	<u>Clay</u> , red-brown, "Fat", damp, crumbly in hand carves smooth vitrius surface with knife, hard, 2 lamini of very fine sand in 5' run				
			/////////	40.0					
					T.D. 40.0				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: WHK

Sheet: 1 OF 5
Bore Point: Offset BW1 5'

Precision Engineering, Inc.
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Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 9' bgs
Boring No.: BW 1 C

Log of Test Borings

Elevation: TBD
Date: 11/10/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			///////// ///////// ///////// ///////// /////////	22.0					
	24.5-24.7		*****		Sand , very fine, silty, dry, loose, light red-brown				
	24.7-26.5		/***/**/ /***/**/ /***/**/	25.0	Clay , very sandy, silty hard, damp, red-brown crumbly				
	26.5-28.5		**_**_ **_**_ **_**_ **_**_		Sand , very fine, silty, dry, slightly clayey, occasional < 1 cm clay beds, loose-moderate dense, very light brown				
	28.5-30.5		/**/**/**/ /**/**/**/ /**/**/**/ /**/**/**/	30.0	Clay , slightly sandy, silty, firm-stiff, very light red-brown, damp, occasional laminar salt bed, dry, very crumbly in hand				
	30.5-31.3		/**/**/**/		Clay , sandy, gradational with above dry, stiff-hard, very light brown				
	31.3-32.3		/**/**/**/						
	32.3-32.9		*****		Sand , very fine, loose, silty, slightly clayey, moderate dense, very light brown, dry				
	32.9-33.2		/**/**/**/		Clay , slightly sandy, firm, dry, very light brown				
	33.2-35.0		/**/**/**/		Clay , slightly sandy, firm, dry, very light brown crumbles easily				
			*****		Sand , very silty, dry, very light brown, moderate, dense				
			/**/**/**/		Clay , slightly sandy, silty, hard, dry, crumbly, very light red-brown, gradational contacts				
			/**/**/**/	35.0					
	35.0-40.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// /////////	40.0	Clay , red-brown, "Fat", damp, crumbly in hand carves smooth vitrius surface with knife, hard, 2 lamini of very fine sand in 5' run				
	40.0-45.0		///////// ///////// ///////// ///////// ///////// /////////		Same as above , 1 sand laminae				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: WHK

Sheet: 2 OF 5
Bore Point: NW of Pond 11

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 28.5' bgs
Boring No.: BW2B

Log of Test Borings

Elevation: TBD
Date: 10/28/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			///////// ///////// ///////// ///////// /////////	22.0					
	24.4-24.8		*****		Sand , fine, red-brown, white grains, dry				
	24.8-25.0		***** ***** *****	25.0	Silt , pinkish-brown, dry				
	25.0-26.2		/////////		Clay , firm, silty, reddish brown w/ pinkish-brown mottling, wet				
	26.2-26.7		/////////						
	26.7-27.3		*****		Sand , very fine, pinkish-brown moist				
	27.3-29.0		-----		Silt , pinkish-brown, damp				
	29.0-30.0		///////// ///////// ///////// /////////		Clay , firm, silty, pinkish- brown to reddish-brown, mottled, damp, small carbonate nodules				
			/////////		Clay , reddish-brown, damp, small carbonate nodules				
			/////////	30.0					
	30.0-31.2		-----		Silt , pinkish-brown, mottled, damp				
	31.2-34.3		///////// ///////// ///////// ///////// ///////// /////////		Clay , firm, red-brown, moist (32.5-32.6 grey mottled clay)				
	34.3-35.0		----- ----- -----		Silt , pinkish-brown, dry				
			-----	35.0					
	35.0-40.0		//-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-//		Clay , red-brown, firm, silty, mottled pinkish-brown moist				
			/////////	40.0					
	40.0-40.9		/////////		Clay , red-brown, firm, moist				
	40.9-41.8		/////////		Clay , red-brown, soft, wet				
	41.8-42.9		//-//-//-// //-//-//-//		Sand , very fine, silty, red-brown, thin clay stringers black laminations, water bearing				
	42.9-43.5		/////////		Clay , red-brown, soft, wet				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: WHK

Sheet: 3 OF 5
Bore Point: NW of Pond 11

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 28.5' bgs
Boring No.: BW2B

Log of Test Borings

Elevation: TBD
Date: 10/28/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	43.5-44.7		///////// /////////		<u>Clay</u> , red-brown, firm, wet				
	44.7-45.0		**/**/**/	45.0	<u>Sand</u> , clayey, red-brown, soft, wet				
	45.0-45.6		**/**/**/		<u>Sand</u> , clayey, red-brown, soft, water bearing				
	45.6-48.5		///////// ///////// ///////// ///////// /////////		<u>Clay</u> , red-brown, firm, wet				
	48.5-48.8		**/**/**/		<u>Sand</u> , clayey, red-brown, soft, wet				
	48.8-50.0		///////// ///////// /////////	50.0	<u>Clay</u> , red-brown, firm, wet, grey reduction spots				
	50.0-55.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// /////////	55.0	<u>Clay</u> , red-brown, firm, moist (2.0' of sample recovered)				
	55.0-60.0		/*/*/*/*/ /*/*/*/*/ /*/*/*/*/ /*/*/*/*/ /*/*/*/*/ /*/*/*/*/		<u>Clay</u> , sandy, firm, brown, saturated (6" of sample recovered)				
	58.2-59.8		**/**/**/ **/**/**/ **/**/**/ **/**/**/	60.0	<u>Sand</u> , slightly clayey, mottled red-grey, dry, dense dense-very dense, pebbles of limestone, chert and sandstone				
	60.0-64.7		***** ***** ***** ***** ***** *****		<u>Sand</u> , fine, brown, loose, water bearing, 1" clay stringer from 61.0 to 61.2' (1.2' of sample recovered)				
	64.7-65.0		///////// ///////// /////////		<u>Clay</u> , red-brown, firm, wet				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: WHK

Bore Point: NW of Pond 11

505-523-7674

Boundary Wells

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	65.0-70.0		/ /	65.0 70.0	<u>Clay</u> , dark brown, firm, some red-brown mottling, wet				
	70.0-75.0		/ /	75.0	<u>Clay</u> , dark brown, firm, wet				
	75.0-79.5		/ /		<u>Clay</u> , red brown, firm, wet				
	79.5-82.5		/ /	80.0	<u>Clay</u> , red brown, firm, wet, grey reduction spots				
	82.5-84.5		**/**/** **/**/** **/**/** **/**/>		<u>Sand</u> , clayey, red-brown, moderate dense, some gravels (sandstone and limestone), weakly water bearing				
	84.5-85.0		/ / / / / / / / / / / / / / / / / / / /	85.0	<u>Petrified Forest Formation, Painted Desert Mem Mudstone</u> , weathered, red-brown, grey-green reduction spots, hard, moist-wet, blocky/crumblly				

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C:\unzipped\Boundry Well Locations\[BW2B.xls]Sheet4

Sheet: 5 OF 5

Bore Point: NW of Pond 11

Precision Engineering, Inc.

P.O. Box 422

Las Cruces, NM 88004

505-523-7674

File #: 03-118

Site: Ciniza

Boundary Wells

Water Elevation: 28.5' bgs

Boring No.: BW2B

Elevation: TBD

Date: 10/28/2003

Log of Test Borings

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	85.0-90.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// /////////	86.0 90.0	<u>Mudstone</u> , weathered, red-brown, grey-green reduction spots, hard, moist-wet, blocky/crumbly, mottled, thin bedded to laminar, more laminar > 86'				
	T.D.				Set well in boring .010" Slotted PVC Screen: set in 80'-90' interval				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: WHK

Sheet: 2 OF 4
Bore Point: N. Ponds-see plan

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: Not Encountered
Boring No.: BW3B

Log of Test Borings

Elevation: Existing
Date: 11/11/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			///////// ///////// ///////// /////////	22.0	<u>Clay</u> , red-brown, firm, blocky, moist, roots from 0-2'				
	24.3-24.6		*- - - *		<u>Silt</u> , sandy, light brown, firm, dry				
	24.6-25.0		- - - - - - - - - -	25.0	<u>Silt</u> , light brown, hard, moist				
	25.0-27.0		*- - - * *- - - * *- - - *		<u>Silt</u> , sandy, light brown, loose, dry				
	27.0-30.0		/- - /- - /- - /- - /- - /- - /- - /- - /- - /- - /- - /- - /- - /- -	30.0	<u>Silt</u> , some clay, mottled (silt is tan, clay is red-brown), hard, damp				
	30.0-35.0		//-//-//- //-//-//- //-//-//- //-//-//- //-//-//- //-//-//- //-//-//- //-//-//- //-//-//- //-//-//-	35.0	<u>Clay</u> , silty, red-brown, mottled, hard, moist				
	35.0-37.0		//-//-//- //-//-//- //-//-//-		<u>Clay</u> , silty, red-brown, mottled, hard, moist				
	37.0-40.0		///////// ///////// ///////// ///////// ///////// ///////// /////////	40.0	<u>Clay</u> , red-brown, hard, moist				
	40.0-41.0		/////////		<u>Clay</u> , red-brown, hard, moist, blocky				
	41.0-41.6		/- - /- -		<u>Silt</u> , clayey, red-brown mottled, firm, moist				
	41.6-42.0		- - - - -		<u>Silt</u> , very fine sand, red-brown, soft, damp				
	42.0-43.0		***** ***** *****		<u>Sand</u> , very fine, some silt, tan grading to red-brown, loose, dry, siltier at bottom				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

Sheet: 3 OF 4
Bore Point: N. Ponds-see plan

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: Not Encountered
Boring No.: BW3B

Log of Test Borings

Elevation: Existing
Date: 10/15/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	43.0-45.0		///////// ///////// /////////	43.5	Clay , some silt, red-brown, mottled, firm, moist horizontal laminations, coarsing upward to sand				
	45.0-46.7		**_**_** **_**_** **_**_** **_**_**	45.0	Sand , very fine, silty, red-brown, loose, damp				
	46.7-47.3		-----		Silt , red-brown, firm, damp				
	47.3-48.3		//-//-//-// //-//-//-//		Clay , silty, red-brown mottled, blocky, firm, moist				
	48.3-50.0		///////// ///////// ///////// /////////	50.0	Clay , red-brown, small amount of grey mottling, hard, wet, limonite at 49.0'				
	50.0-55.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// /////////	55.0	Clay , red-brown, small amount of grey mottling, hard, wet, limonite at 49.0', slightly softer than above (sticky)				
	55.0-57.5		///////// ///////// ///////// /////////		Clay , red-brown, stiff, wet, some charcoal at 56.0' as laminar partings				
	57.5-57.7		//*//*		Clay , red-brown, sandy, clay soft on both sides not water bearing but wetter than above and below				
	57.7-60.0		//*//*						
			///////// ///////// ///////// /////////	60.0	Clay , red-brown, very stiff, wet, sticky, slickensided when sampled, some grey reduction marks as random striations, looks dendritic in 3D, occasional charcoal pieces				
	60.0-61.8		/////////		Clay as above				
	61.8-62.0		*****		Sand , clayey, red-brown, loose-soft, wet				
	62.0-62.4		/////////		Clay , red-brown, firm, wet, some scattered charcoal				
	62.4-63.2		/////////		Clay , sandy, brown-grey, soft, very wet, not water bearing				
	63.2-66.2		***** ***** *****						
			*****		Sand , silty, fine, red-brown, water bearing, some clay, limonite stain, laminar banded				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

Sheet: 4 OF 4
Bore Point: N. Ponds-see plan

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: Not Encountered
Boring No.: BW3B

Log of Test Borings

Elevation: Existing
Date: 10/15/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			***** ***** *****	65.0					
	66.2-69.6		///////// ///////// ///////// ///////// /////////		<u>Clay</u> , light red, very stiff, wet, some scattered reduction spots				
	69.6-69.8		*****		<u>Sand</u> , clayey, red-brown, moist				
	69.8-71.8		///////// ///////// ///////// ///////// /////////	70.0	<u>Clay</u> , red-brown, stiff, wet, occasional red spots				
	71.8-72.2		/*/*/*/*		<u>Clay</u> , coarse sandy, dark red-brown, wet				
	72.2-72.4		/////////		<u>Clay</u> , red-brown, stiff, wet				
	72.4-72.8		*****		<u>Sand</u> , clayey, red-brown, moderate dense,				
	72.8-74.0		*****		loose, wet				
	74.0-75.0		///////// ///////// ///////// ///////// /////////	75.0	<u>Clay</u> , coarse sandy, very stiff, wet, rare pebbles <u>Chinle Group, Petrified Forest Formation,</u> <u>Painted Desert Member</u> <u>Mudstone</u> , purple, hard, damp, blocky/crumbly, green-grey reduction webs and occasional spots				
	T.D.				Set well in boring .010" Slotted PVC Screen: set in 62'-72' interval				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: KM/NS

Bore Point: NW of Pond 11

505-523-7674

Boundary Wells

Date: 10/28/2003

Log of Test Borings

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LOGGED BY: WHK

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Sheet: 2 OF 8
Bore Point: NW of Pond 11

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 11.0 bgs
Boring No.: BW2C

Log of Test Borings

Elevation: TBD
Date: 10/28/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			////////// ////////// ////////// ////////// //////////	22.0					
	24.4-24.8		*****		Sand , fine, red-brown, white grains, dry				
	24.8-25.0		***** ***** *****	25.0	Silt , pinkish-brown, dry				
	25.0-26.2		//////////		Clay , firm, silty, reddish brown w/ pinkish-brown mottling, wet				
	26.2-26.7		//////////						
	26.7-27.3		*****		Sand , very fine, pinkish-brown moist				
	27.3-29.0		//////////		Silt , pinkish-brown, damp				
	29.0-30.0		////////// ////////// ////////// //////////	30.0	Clay , firm, silty pinkish-brown to reddish-brown, mottled, damp, small carbonate nodules Silt , pinkish-brown, mottled, damp nodules				
	30.0-31.2		-----		Silt , pinkish-brown, mottled, damp				
	31.2-34.3		////////// ////////// ////////// ////////// ////////// //////////		Clay , firm, red-brown, moist (32.5-32.6 grey mottled clay)				
	34.3-35.0		----- ----- -----	35.0	Silt , pinkish-brown, dry				
	35.0-40.0		//-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-//	40.0	Clay , red-brown, firm, silty, mottled pinkish-brown moist				
	40.0-40.9		//////////		Clay , red-brown, firm, moist				
	40.9-41.8		////////// //////////		Clay , red-brown, soft, wet				
	41.8-42.9		//-//-//-// //-//-//-//		Sand , very fine, silty, red-brown, thin clay stringers black laminations, water bearing				
	42.9-43.5		//////////		Clay , red-brown, soft, wet				

SIZE & TYPE OF BORING: 6-1/4" OD Air Rotary

LOGGED BY: WHK

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Sheet: 3 OF 8
Bore Point: NW of Pond 11

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 11.0 bgs
Boring No.: BW2C

Log of Test Borings

Elevation: TBD
Date: 10/28/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	43.5-44.7		///////// /////////		<u>Clay</u> , red-brown, firm, wet				
	44.7-45.0		**/**/**/	45.0	<u>Sand</u> , clayey, red-brown, soft, wet				
	45.0-45.6		**/**/**/		<u>Sand</u> , clayey, red-brown, soft, water bearing				
	45.6-48.5		///////// ///////// ///////// ///////// /////////		<u>Clay</u> , red-brown, firm, wet				
	48.5-48.8		**/**/**/		<u>Sand</u> , clayey, red-brown, soft, wet				
	48.8-50.0		///////// ///////// /////////	50.0	<u>Clay</u> , red-brown, firm, wet, grey reduction spots				
	50.0-55.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// /////////	55.0	<u>Clay</u> , red-brown, firm, moist 2.0' of sample recovered				
	55.0-60.0		/*/*/*/*/ /*/*/*/*/ /*/*/*/*/ /*/*/*/*/ /*/*/*/*/ /*/*/*/*/		<u>Clay</u> , sandy, firm, brown, saturated (6" of sample recovered)				
	58.2-59.8		**/**/**/ **/**/**/ **/**/**/ **/**/**/	60.0	<u>Sand</u> , slightly clayey, mottled red-grey, dry, dense dense-very dense, pebbles of limestone, chert and sandstone				
	60.0-64.7		***** ***** ***** ***** ***** *****		<u>Sand</u> , fine, brown, loose, water bearing, 1" clay stringer from 61.0 to 61.2' (1.2' of sample recovered)				
	64.7-65.0		///////// ///////// /////////		<u>Clay</u> , red-brown, firm, wet				

SIZE & TYPE OF BORING: 6-1/4" OD Air Rotary

LOGGED BY: WHK

C:\unzipped\Boundry Well Locations\[BW2C.xls]Sheet3

Sheet: 4 OF 8

Bore Point: NW of Pond 11

Precision Engineering, Inc.

P.O. Box 422

Las Cruces, NM 88004

505-523-7674

File #: 03-118

Site: Ciniza

Boundary Wells

Water Elevation: 11.0 bgs

Boring No.: BW2C

Log of Test Borings

Elevation: TBD

Date: 10/28/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS	%M	LL	PI	CLASS.
					(MOISTURE, CONDITION, COLOR, ETC.)				
	65.0-70.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// <u>70.0</u>	<u>65.0</u>	<u>Clay</u> , dark brown, firm, some red-brown mottling, wet				
	70.0-75.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// <u>75.0</u>		<u>Clay</u> , dark brown, firm, wet				
	75.0-79.5		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// <u>80.0</u>		<u>Clay</u> , red brown, firm, wet				
	79.5-82.5		///////// ///////// ///////// ///////// ///////// ///////// <u>80.0</u>		<u>Clay</u> , red brown, firm, wet, grey reduction spots				
	82.5-84.5		**/**/**/ **/**/**/ **/**/**/ **/**/**/		<u>Sand</u> , clayey, red-brown, moderate dense, some gravels (sandstone and limestone), weakly water bearing				
	84.5-85.0		///////// ///////// ///////// ///////// <u>85.0</u>		<u>Petrified Forest Formation, Painted Desert Mem</u> <u>Mudstone</u> , weathered, red-brown, grey-green reduction spots, hard, moist-wet, blocky/crumbly				

SIZE & TYPE OF BORING: 6-1/4" OD Air Rotary
LOGGED BY: WHK

C:\unzipped\Boundry Well Locations\[BW2C.xls]Sheet4

LOGGED BY: WHK

C:\unzipped\Boundry Well Locations\[BW2C.xls]Sheet4

Sheet: 6 OF 8

Bore Point: NW of Pond 11

Precision Engineering, Inc.

P.O. Box 422

Las Cruces, NM 88004

505-523-7674

File #: 03-118

Site: Ciniza

Boundary Wells

Water Elevation: 11.0 bgs

Boring No.: BW2C

Elevation: TBD

Date: 10/28/2003

Log of Test Borings

					MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)					
LAB #	DEPTH	BLOW COUNT	PLOT	SCALE		%M	LL	PI	CLASS.	
			///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// <u>110.0</u> ///////// ///////// ///////// ///////// ///////// ///////// ///////// <u>115.0</u> ///////// ////////							

SIZE & TYPE OF BORING: 6-1/4" OD Air Rotary

LOGGED BY: WHK

Sheet: 2 OF 3
Bore Point: 10' West of BW2B

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 25.9' bgs
Boring No.: BW 2A

Log of Test Borings

Elevation: TBD
Date: 11/10/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			///////// ///////// ///////// ///////// /////////	22.0					
	24.4-24.8		*****		<u>Sand</u> , fine, red-brown, white grains, dry				
	24.8-25.0		***** ***** *****	25.0	<u>Silt</u> , pinkish-brown, dry				
	25.0-26.2		/////////		<u>Clay</u> , firm, silty, reddish brown w/ pinkish-brown mottling, wet				
	26.2-26.7		/////////						
	26.7-27.3		*****		<u>Sand</u> , very fine, pinkish-brown moist				
	27.3-29.0		-----		<u>Silt</u> , pinkish-brown, damp				
	29.0-30.0		///////// ///////// ///////// /////////		<u>Clay</u> , firm, silty, pinkish-brown to reddish-brown, mottled, damp, small carbonate nodules				
			/////////		<u>Clay</u> , reddish-brown, damp, small carbonate nodules				
			/////////	30.0					
	30.0-31.2		-----		<u>Silt</u> , pinkish-brown, mottled, damp				
	31.2-34.3		///////// ///////// ///////// ///////// ///////// /////////		<u>Clay</u> , firm, red-brown, moist (32.5-32.6 grey mottled clay)				
	34.3-35.0		----- ----- -----		<u>Silt</u> , pinkish-brown, dry				
			-----	35.0					
	35.0-40.0		//-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-// //-//-//-//		<u>Clay</u> , red-brown, firm, silty, mottled pinkish-brown moist				
			//-//-//-//	40.0					
	40.0-40.9		/////////		<u>Clay</u> , red-brown, firm, moist				
	40.9-41.8		///////// /////////		<u>Clay</u> , red-brown, soft, wet				
	41.8-42.9		//-//-//-// //-//-//-//		<u>Sand</u> , very fine, silty, red-brown, thin clay stringers black laminations, water bearing				
	42.9-43.5		/////////		<u>Clay</u> , red-brown, soft, wet				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: WHK

Sheet: 3 OF 3
Bore Point: 10' West of BW2B

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 25.9' bgs
Boring No.: BW 2A

Log of Test Borings

Elevation: TBD
Date: 11/10/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	43.5-44.7		///////// /////////		<u>Clay</u> , red-brown, firm, wet				
	44.7-45.0		**/**/**/	45.0	<u>Sand</u> , clayey, red-brown, soft, wet				
	45.0-45.6		**/**/**/		<u>Sand</u> , clayey, red-brown, soft, water bearing				
	45.6-48.5		///////// ///////// ///////// ///////// /////////		<u>Clay</u> , red-brown, firm, wet				
	48.5-48.8		**/**/**/		<u>Sand</u> , clayey, red-brown, soft, wet				
	48.8-50.0		///////// ///////// /////////	50.0	<u>Clay</u> , red-brown, firm, wet, grey reduction spots				
	50.0-55.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// /////////	55.0	<u>Clay</u> , red-brown, firm, moist (2.0' of sample recovered)				
	55.0-60.0		/*/*/*/*/ /*/*/*/*/ /*/*/*/*/ /*/*/*/*/ /*/*/*/*/ /*/*/*/*/		<u>Clay</u> , sandy, firm, brown, saturated (6" of sample recovered)				
	58.2-59.8		**/**/**/ **/**/**/ **/**/**/ **/**/**/	60.0	<u>Sand</u> , slightly clayey, mottled red-grey, dry, dense dense-very dense, pebbles of limestone, chert and sandstone				
	60.0-64.7		***** ***** ***** ***** ***** *****		<u>Sand</u> , fine, brown, loose, water bearing, 1" clay stringer from 61.0 to 61.2' (1.2' of sample recovered)				
	64.7-65.0		///////// ///////// /////////		<u>Clay</u> , red-brown, firm, wet T.D. 65.0'				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: WHK

Sheet: 1 OF 3

Bore Point: Dike 7-8 intersection

Precision Engineering, Inc.

P.O. Box 422

Las Cruces, NM 88004

505-523-7674

File #: 03-118

Site: Ciniza

Boundary Wells

Water Elevation: 9' bgs

Boring No.: BW1B

Elevation: Existing

Date: 10/28/2003

Log of Test Borings

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SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: WHK

Sheet: 2 OF 3
Bore Point: Dike 7-8 intersection

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 9' bgs
Boring No.: BW1B

Log of Test Borings

Elevation: Existing
Date: 10/28/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			///////// ///////// ///////// ///////// /////////	22.0					
	24.5-24.7		*****		Sand , very fine, silty, dry, loose, light red-brown				
	24.7-26.5		/*/*/*/*/ /*/*/*/*/ /*/*/*/*/	25.0	Clay , very sandy, silty hard, damp, red-brown crumbly				
	26.5-28.5		**_**_ **_**_ **_**_ **_**_		Sand , very fine, silty, dry, slightly clayey, occasional < 1 cm clay beds, loose-moderate dense, very light brown				
	28.5-30.5		/*/*/*/*/ /*/*/*/*/ /*/*/*/*/ /*/*/*/*/	30.0	Clay , slightly sandy, silty, firm-stiff, very light red-brown, damp, occasional laminar salt bed, dry, very crumbly in hand				
	30.5-31.3		/*/*/*/*/		Clay , sandy, gradational with above dry, stiff-hard, very light brown				
	31.3-32.3		/*/*/*/*/						
	32.3-32.9		*****		Sand , very fine, loose, silty, slightly clayey, moderate dense, very light brown, dry				
	32.9-33.2		/*/*/*/*/						
	33.2-35.0		/*/*/*/*/		Clay , slightly sandy, firm, dry, very light brown crumbles easily				

			*****		Sand , very silty, dry, very light brown, moderate, dense				
			/*/*/*/*/						
			/*/*/*/*/		Clay , slightly sandy, silty, hard, dry, crumbly, very light red-brown, gradational contacts				
			/*/*/*/*/	35.0					
	35.0-40.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// /////////	40.0	Clay , red-brown, "Fat", damp, crumbly in hand carves smooth vitrius surface with knife, hard, 2 lamini of very fine sand in 5' run				
	40.0-45.0		///////// ///////// ///////// ///////// /////////		Same as above , 1 sand laminae				

Sheet: 3 OF 3
Bore Point: Dike 7-8 intersection

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundary Wells

Water Elevation: 9' bgs
Boring No.: BW1B

Log of Test Borings

Elevation: Existing
Date: 10/28/2003

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
			///////// ///////// /////////	44.0 45.0					
	45.0-50.0		///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// ///////// /////////	50.0	Same as above				
	50.0-52.0		**/**/**/ **/**/**/ **/**/**/		Sand, clayey, moderate dense, dark red-purple, damp				
	52.0-55.0		///////// ///////// ///////// ///////// ///////// /////////	55.0	Clay, dark red-purple, hard, moist-wet, crumbles in hand sample				
	55.0-58.2		/*/*/*/*/*/ /*/*/*/*/*/ /*/*/*/*/*/ /*/*/*/*/*/ /*/*/*/*/*/ /*/*/*/*/*/		Clay, very sandy, red-purple, hard, brittle, moist-wet, gradation of sand is greater with depth				
	58.2-59.8		**/**/**/ **/**/**/		Sand, slightly clayey, mottled red-grey, dry, dense				
	59.8-60.0				dense-very dense, pebbles of limestone, chert and sandstone				
	60.0-65.0			60.0	Petrified Forest Formation of the Painted Desert Member. Clay, (claystone), red, carbonate nodules, (white), hard, crumbly, damp-moist				
					Same as above, some grey mottling, fissile at 60.0'				
	T.D.			65.0	Set well in boring, see well diagram				
					.010" Slotted PVC Screen: set in 64.6'-54.6' interval				
SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger						LOGGED BY: WHK			

Sheet: 2 OF 2
Bore Point: SW corner of Pond 1

Precision Engineering, Inc.
P.O. Box 422
Las Cruces, NM 88004
505-523-7674

File #: 03-118
Site: Ciniza
Boundry Wells

Water Elevation: Not Encountered
Boring No.: GWM-1

Log of Test Borings

Elevation: TBD
Date: 7/8/2004

LAB #	DEPTH	BLOW COUNT	PLOT	SCALE	MATERIAL CHARACTERISTICS (MOISTURE, CONDITION, COLOR, ETC.)	%M	LL	PI	CLASS.
	21.5-24.0		///////// /////////	22.0	<u>Sand</u> , gravelly				
	22.5-24.0		///////// ///////// /////////		<u>Petrified Forest Formation, Painted Desert Member, Mudstone</u> , weathered, red-purple, reduction spots, hard, moist, blocky/crumbly				
	24.0			25.0	T.D.				
				30.0	Screened interval 18-24'				
				35.0					
				40.0					
					<u>Clay</u> , black, wet,				

SIZE & TYPE OF BORING: 4-1/4" ID Hollow Stemmed Auger

LOGGED BY: NS